Hip Hop Ecology: Investigating the connection between creative cultural movements, education and urban sustainability

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HIP HOP ECOLOGY: INVESTIGATING THE CONNECTION BETWEEN CREATIVE CULTURAL MOVEMENTS, EDUCATION AND URBAN SUSTAINABILITY

a dissertation

by

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Submitted in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

AUGUST 2012

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Abstract

There is an emerging pairing between the grassroot hip hop movement and urban sustainability initiatives that I call hip hop ecology. The synergy between hip hop and environmentalism defies stereotypes of the whiteness of the environmental movement and the forms of discourse that are used to raise awareness of the ecological crisis. This dissertation builds from my work in the Boston Public Schools, where for four years, I have taught environmental science using environmentally-themed (green) hip hop. In these classes I have asked students to express their learning in their own creative verse. I present three studies that situate the connection between hip hop and environmentalism in social and educational contexts. The first is a comparative content analysis of environmental science textbooks and green hip hop tracks that will help define the sociotextual scene of the urban environmental classrooms where I worked. The second research site is the community, where I interviewed "hip hop ecologists," activists and emcees who work directly on urban sustainability and environmental justice while producing hip hop with green themes. The second study provides an in-

depth look at how these young environmental activists of color navigate the racial dynamics of the movement and try to sustain their careers as leaders and artists. The third study is an ethnography where I synthesize four years of classroom teaching and analyze the various cases where constructs of race and nature intersected, deconstructing both the social interactions in the classroom as well as the green hip hop lyrics written by the students. The implications of a hip hop ecology are that we as environmental practitioners actively rethink what counts as an environmental text and what part of our own creativity we tap as educators who endeavor to promote a more racially diverse and powerful movement for sustainability.

Acknowledgements

There are too many people to thank for making this dissertation a reality. This work is dedicated to my parents, Sharon Cermak and Laird Cermak. Without their vision and passion for research and loving support of my life I would never have made it this far.

I thank my entire family and Katherine Bright who kept me sane during this journey. My dissertation committee of Juliet Schor, Stephen Pfohl and Leigh Patel Stevens has been a wonderful mix of skills and support that have made this work reach its fullest potential.

I also wish to acknowledge the educators whom I have worked with over the years and allowed me to share their classrooms. Jessica Madden-Fuoco, Annie Debarros, Tommy Hayes, Andrew Rabin, and Lisa Henderson have all been amazing colleagues and friends.

Lastly, I sincerely thank all the young activists and artists who gave their voice to this study. Carlos Pemberthy was one of the first whose skills and passion for helping young people with his hip hop talent literally changed my entire perspective on what counts as environmental scholarship.

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Introduction

Grind for the Green (G4G) is not your typical environmental organization. Departing from the standard environmental symbols of green leaves or pristine forests the G4G website features graffiti text, microphones and two massive subwoofers (speakers) with metal gears strewn next to them in the foreground of their logo. In the background, a rainbow and trees adorn a green cityscape just in case you forget this is an environmental group. Founded in 2009 in Oakland, CA the group's first sentence of their mission sums up their perspective as well as the impetus for this dissertation, "*G4G is committed to moving youth of color from the margins to the epicenter of the environmental movement."*[1] Their web page heralds a solar-powered hip hop concert with a healthy food area for kids, testimonies about going green from urban kids of color and statements from well-known emcees (hip hop artists) like Talib Kwali, Dead Prez and Davey D. According to Van Jones, a renowned African American civil rights and environmental leader and founder of the non-profit Green for All,

[1] http://www.grindforthegreen.com/about-us/

> **"Grind for the Green is one of the most innovative and creative youth components of the green wave rising in America and globally. G4G is giving the green movement's political agenda a cultural voice – and that voice is Hip Hop."** –*Van Jones, Grind for the Green website*

The idea that hip hop can be a "cultural voice" for the environmental movement is the starting point of my dissertation. This research begins by broadly theorizing the historic absence of urban youth of color in the environmental movement and then seeks to understand how hip hop culture can reduce their marginal status. Similar to G4G, I recognize how urban youth of color are under-represented in the environmental movement; in both the participation in campaigns and in the plethora of media that make use of green themes in our popular culture (Mohai, 2003; Taylor, 2000). Following Van Jones' assertion, I will investigate how hip hop is creating a unique cultural discourse about environmental issues and how this discourse has become part of a strategy to build a more racially inclusive environmental movement.

The main setting for my research is urban high school environmental science classrooms in Boston, MA where over the course of four years I began adding environmentally-themed hip hop to the curriculum and observing how this cultural voice changed the way students received and interpreted environmental problems. In my classrooms I intentionally blended a traditionally Eurocentric environmental science with hip hop culture and the unique interactions this elicited has given me insights into how

environmental discourse is shaped by race and culture in educational contexts. My research question is: What does the interaction of hip hop and environmental discourse in a classroom setting show us about race and nature issues in general?

Scholars and activists are just beginning to makes sense of how hip hop culture interacts with environmental politics (Rosenthal, 2006). The literature from cultural studies has treated hip hop extensively (Alim, Ibrahim, & Pennycook, 2008; Chang, 2005; Mcbride, 2007; Potter, 1995; Reeves, 2009; Spady, Alim, & Meghelli, 2006) but this study is situated amongst a more recent wave of inquiry examining how hip hop articulates with other social movements, religions and cultures in various social contexts (Hill Collins, 2005; Morgan, 2000; Pough, 2007; Smith & Jackson, 2005). The rare work that has been done that blends hip hop and environmental politics takes place in the community and non-profit realm via groups like G4G. I have had the unique opportunity, as a sociologist, to be an educator in the Boston public high schools working specifically on environmental science education and at the same time working in the movement alongside groups such as 3rd Eye Unlimited and Project Hip Hop, the East coast equivalents of G4G. This dual role has led me to ask questions at the intersection of environmental education research, environmental sociology and hip hop studies.

I take a sociological perspective on the environmental science classrooms that are my sites of research which entails examining the history and culture of the different forms of knowledge at play and how they shape the educational experience of all participants.

Accordingly, this analysis takes as meaningful the fact that the majority of environmental educators are White, natural science-trained teachers and that this particular relationship to nature and socioeconomic status influences how they interact with a group of urban youth of color who themselves bring knowledge about nature to the classroom. Like their status in the movement, urban youth of color are underrepresented in achievement and engagement in the environmental classrooms (Hershey & Hill, 1977; Johnson, Bowker, & Cordell, 2004; Mohai, 2003). What I have observed is that the urban environmental classroom, where urban youth of color engage or disengage with environmental knowledge is a key site for understanding how racial and cultural issues affect the environmental movement at large. Thus, by understanding how themes of environmental knowledge, race, and culture interact in the classroom I can make inferences and gain insight on how the larger movement may develop strategies for stronger diversity and inclusivity.

I am motivated to focus on classrooms because my early encounters in teaching environmental science were met with disinterest, indifference and sometimes outright disdain by urban youth. Yet, like many urban educators I realized that the problem could not be distilled to resources or administration but was more related to the course content (Kimmerer, 2002). Most of the environmental courses I worked with were well-funded and backed by outside non-profit organizations and the very presence of environmental courses at all reflected administrative priority of this type of content. Instead, I found it was the cultural content of the curriculum that was not melding with

the student's world view. The field of urban education studies has for some time identified the importance of tapping student's "cultural reservoirs" to increase engagement and motivation (Alim, 2004; Gonzalez, Moll, & Amanti, 2005; Moll, Amanti, Neff, & Gonzalez, N, 1992). Like Van Jones, I viewed the cultural voice of hip hop as a key site of intersection where the creative language of the street met the discourse about nature. Bringing hip hop's oft-overlooked cultural voice on nature into the urban environmental classroom and observing closely how this changed the discourse in the classroom and ultimately student learning are key parts of this dissertation.

For this research I am using hip hop culture as a way to bridge to questions of urban sustainability, creativity and education. Hip hop as a culture is so pervasive that scholars and commentators note it as a major force in changing how politics are experienced by young urban people of color, dubbing the period of 1980 to the present as "the hip hop generation" (Chang, 2005; Painter, 2006). Hip hop can be seen as an extension of race-politics, like Black Power and Civil rights before it, where new possibilities arise but also longstanding racial biases must be negotiated (Hill Collins, 2005). Patricia Hill Collins, in her book *From Black Power to Hip Hop: Racism, Nationalism, and Feminism* (2005), writes about feminism and how it has not been met with universal acceptance by women of color in the hip hop era:

> **"Black women seemingly reject certain expressions of feminism, not because they disagree with the main idea of feminism, but because**

they reject feminist principles as refracted through American relations of race, class, and nation" (Hill Collins, 2005, p.185)

I connect this excerpt to the much-studied racial bias in environmentalism (Dungy, 2009; Johnson et al., 2004; Smith, 2007) where the refraction of environmental discourse through the prism of race has resulted in a schism that requires a deeper understanding to resolve. Hill Collins calls for a re-examination of progressive movements to see how they are changing race relations in contemporary settings. Groups like G4G are promising starts to an environmentally-friendly hip hop movement but, as I was observing in my classrooms, there is still much to be understood of how constructs of race shape and are shaped by environmental discourse.

This dissertation synthesizes the work on hip hop, environment and identity by examining the production of the cultural voice, the actual words and lyrics that are examples of "green hip hop" in various applied contexts. The three studies presented here follow a progression from analyzing environmental hip hop as a cultural text, to interviewing the producers of these texts, to eventually incorporating these texts into my teaching practices. Taken together, they hold implications for how we understand future educational efforts for sustainability, particularly for racially diverse learners in urban settings.

The first study, “The Lorax, Hip Hop and Environmental Science: Comparing poetic verse with scientific textbooks on environmental topics,” begins by taking a broad look at how poetic verse compares with scientific perspectives on nature in an educational context. The comparative content analysis compares Advanced Placement environmental science textbooks with green hip hop across topics within environmental thought such as global climate change, food, freshwater and energy. By showing the differences and similarities of the ways Western science and hip hop approach their creation of knowledge about nature the goal is to map how these can be used in a complementary way in environmental science classrooms. This pairing of hip hop and science was the same method I used when teaching in urban high school classrooms, the topic of the third study.

The second study entitled, “The making of a hip hop ecologist: remixing race, nature and music in movements for urban sustainability,” extends from my own activist experience where I met youth of color whom, to my surprise at the time, were not only avid environmental leaders but also artists who were creating their own green hip hop. The study is an interview-based study that helps provide a more in-depth illustration of how these unique youth navigated the various social, economic and environmental challenges to produce their eco-art. The interviews help show the similar and challenging experiences these youth faced in a mostly white environmental movement that does not fully understand their identity or the power of their art. A few key songs

from the hip hop ecologists are also analyzed not only for the content but for what the artist report as the inspiration and motivation behind their composition. It was these songs written by some of the artists in this study that I would mobilize into educational initiatives that blended green hip hop and science.

The third study, "Hip Hop Ecology: What music can bring to urban environmental education," is an ethnographic account of my classroom experience incorporating the green hip hop into my ecological science lessons. This final study brings the ideas of textual production full circle and I reflect on key interactions with students that interrupted my own sense of ecological knowledge and literacy. This study includes analysis of student work as well as student-produced green hip hop. It ends with an examination of the role of my own voice in teaching about environment and what it means for a science-trained educator trying to make sense of hip hop discourse.

Although each of these studies contains its own references to relevant scholarly articles, the following section is a more encompassing literature review for the dissertation. Two broad areas are reviewed, 1) the field of environmental justice studies is provided as a context for this body of work that extends from analyses of race and environment, and 2) the fields of hip hop studies and environmental education that also have relevance to this classroom-based perspective of this research. Like the idea of hip hop ecology itself, this dissertation is situated at the crux of many disciplines, ideologies and levels of

application. Ultimately, the three studies and my concluding section represent the personal and academic journey taken when these theoretical ideas about race, nature, and creativity are put into practice. Although I am no rapper, I feel in the end I have become a hip hop ecologist myself.

Literature Review

The Environmental Justice Challenge in Social Movements and Education

The claim that the environmental movement needs more sensitivity to race and class issues comes from the environmental justice movement (Agyeman, 2005; Bullard, 2005; Taylor, 2000). In the late seventies and early eighties the term "environmental justice" and "environmental racism" were becoming more prominent as activists of color sought to describe the differential impact of environmental problems on the poor, the working class and communities of color (Bryant & Mohai, 1992; Bullard & Chavis, 1999). The term environmental justice was officially described with seventeen principles at the landmark National People of Color Environmental Leadership Summit in 1991. I will historicize and summarize how this racialized line of environmental discourse has influenced environmental thought as a whole, tracing it into the social movement scene and how it is also influencing environmental education. This will help situate this study at the intersection of hip hop, as a racialized oral tradition, and contemporary urban environmentalism.

Central to understanding environmental justice (EJ) is the notion that different cultures may have varying discourses on the ecological crisis and that these are shaped and constructed by social forces, particularly inequality. In "*The garden and the sea: US Latino environmental discourses and mainstream environmentalism"* (1993) sociologist Barbara Lynch describes environmental discourses as drawing from "shared sets of imagined landscapes" that derive from specific historical circumstances. Her work contrasts the landscape of an un-peopled, pristine, wilderness which has relevance for mainstream Anglo-Americans with that of urban Latino populations who viewed urban gardens as the interactive locale of cultivation between humans and nature. While few Anglo-Americans spend more than a weekend per year in pristine wilderness and not all urban Latinos garden, Lynch found stable differences in how these relations to nature were conjured up during interview and narrative. This difference in how culture mediates understandings of nature is just one of the many ways environmental discourses may differ (Maffi, 2001; Mulhausler, 2001; Mulhausler & Peace, 2006). Lynch compared the Anglo and Latino American environmental discourses through interview and by interpreting texts from Latino authors whose eco-social commentary via fictional literature helped her profile each discourse. The idea that different cultures can have different forms of environmentalism and that these can be traceable through social and textual analysis is a key launching point for approaching the embedded environmental discourse in hip hop.

The EJ perspective is a marginalized discourse that manifests in a separate social movement that exists concurrently with the "mainstream" environmental movement but is populated by different types of people. Where the mainstream movement is led primarily by White, affluent Americans, the EJ movement is staffed by working class, urban, people of color. Dorceta Taylor's historical and sociological work *The Rise of the Environmental Justice Paradigm* (2000) provides a clear outline of how EJ intentionally intertwines issues of race and class with environmental thought and how this difference can result in communication problems with the mainstream. In the paper entitled *Mission Impossible? Environmental Justice Activists' Collaborations with Professional Environmentalists and with Academics* (2005), Cable et al provide some of the first research on the race-based internal division of the environmental movement. They used interview to discern how EJ activists experienced collaborations with non-EJ environmentalists. Despite some positive and neutral interactions, a tone of resentment characterized many EJ activists' reflections of inter-movement collaborations. Although representatives of both groups would attend the same functions, their interactions were infrequent and superficial, not always influenced by race/class divisions, but sometimes simply because they were strangers. Some EJ activists suggested the discrepancy of social location between Anglo-American and activists of color as a reason for negative collaborations. Condescension and power struggles were also a common complaint about the mainstream organizations that

would come to “our community” to help the EJ groups and then dictate as if they knew what was best.

The race-based nature of the EJ discourse was made apparent in a written debate about the fate of environmentalism that started in 2004. When Michael Shellenberger and Ted Nordhaus published a report entitled *The Death of Environmentalism*, they called for a rethinking of the environmental movement, citing its many failures and over emphasis on large-scale policy and top-down change (Shellenberger & Nordhaus, 2004). An animated response to this report came from EJ activists whose quarrel was not with the conclusions of the Death report *per se* but with the fact that the EJ movement as a whole had been omitted from the assessment. Ludovic Blain, an independent writer and EJ activist stated,

> **“The Death of Environmentalism should be called "The Death of Elite, White, American Environmentalism." A critique of the environmental movement that draws on neither the perspectives nor achievements of the environmental-justice (EJ) movement is, at very best, incomplete.” (Blain, 2005)**

From this quote alone it is clear that several race-based claims are made via the EJ label and that they are used to separate that movement from the mainstream. The heated

essays spawned to counter the Death report corroborate with Cable et al's study of the lack of cooperation between the EJ and mainstream movements.

Since the Death of Environmentalism Debate there has been some new collaboration and balance of the discourses made most popular by the work of Van Jones and Majora Carter, two African American environmental and social justice activists. These activists recognize the tension created by race and class in the movement and refocus the discussion on employment opportunities. Jones summarizes the race-environment tension clearly:

> **"Bringing people of different races and classes and backgrounds together under a single banner is tougher than it sounds. The affluent have blind spots. The disadvantaged have sore spots. And both pose barriers to cooperation."**(Jones, 2008, p. 99)

Their argument for eco-equity begins by recognizing how working class, blue-collar, communities of color have been left out of the mainstream discourse on environmental sustainability and they call for not just an abstract recognition and appreciation of nature but a push for tangible job opportunities that contribute to sustainability; these are green-collar jobs (GCJs). Jones and Carter helped found a non-profit called *Green for*

All that focuses on promoting green-collar jobs and lobbying for stronger governmental funding supporting these efforts.

In practice there has been some stimulation of green-collar jobs across the nation but central to the continued viability of this effort are new ways of training and educating a workforce and citizenry that understands the connection between social justice and environmental perspectives. As Jones puts it, we don't just need hybrid cars, but a hybrid movement. In his book *The Green Collar Economy* (2008) Jones calls for building new alliances with cultural groups like the faith-communities that have been traditionally pushed to the margins of environmental discourse. The GCJ practitioners have done less to describe how the themes of this hybrid movement will be put into educational practices. At the same time, there is a longstanding and well-developed literature on environmental education that has a mission of understanding how to teach about the ecological crisis but this literature, like the movement at large, has only recently begun to assess how race, class and space influence pedagogical approaches.

The well-developed literature on environmental literacy is a guiding concept for environmental education practitioners (Orr, 1990; Orr, 1992). Building from the environmental literacy research and borrowing from the environmental justice and critical race perspectives David Gruenewald and colleagues have written at length on

the idea of combining social justice and environmental education. Gruenewald (2003) refers to this hybrid educational effort as an "ecojustice" education:

> **"The ecojustice framework, therefore, must not be confused with a kind of Sierra Club environmentalism that celebrates wilderness ethics and "green" consumerism while avoiding the tensions of race, class, urbanization, and global economic development."** (Gruenewald, 2003, p. 55)

Like the environmental justice advocates, Gruenewald is quick to point out the existing biases in the mainstream environmental movement. The ecojustice framework begins by examining culture, like other scholars of education (Moll et al., 1992), and how this influences perspectives on nature, most notably how race and class views are conspicuously absent from environmental curriculum.

Blending environmental and social justice discourse is posed as a challenge to mainstream educators to rethink the role of culture, ecology and education. Furman and Gruenewald (2004) devise what they term the "Critical Ecological Challenge."

> **"critical ecological educators posit that an ecological crisis necessitates the transformation of education and a corresponding alignment of**

cultural patterns with the sustaining capacities of natural systems"

(Furman & Gruenewald, 2004, p. 5)

Their work recognizes the combination of ecology with social justice, and promotes place-based and community centered education (Furman & Gruenewald, 2004). The challenge stands, yet Gruenewald and others work primarily in suburbs of Washington and with undergraduates and they have few examples from inner-city urban schools attended by Black and Latino youth, the very populations targeted by the green collar job movement.

In sum, we can see within the last decade a concurrent development of a critical race-conscious perspective in both social movement politics, via the EJ and green collar job challenge, and among environmental educators, with the Critical Ecological Challenge example. These new voices of scholar/educator work are not talking to each other enough. Van Jones' work has only begun to articulate how education and the public educational institution have a role in re-tooling the economy and green job structure. Gruenewald's work on aligning cultural patterns with ecologically-sound practices has few sustained examples from inner-cities where classroom populations are often over 95% Black and Latino. Studying the hip hop-environmental link can help address both these challenges, as a race-conscious alternative pedagogical culture and as a source of environmental scholarship.

Hip Hop and the Critical Ecological Challenge

Hip hop has more to do with environmental discourse than is commonly recognized. The Van Jones quote I cited in the introduction to this dissertation, that identified hip hop as a nascent but powerful cultural voice for the green movement, is one clear example coming from practitioners. In the academy, Debra Rosenthal's paper *Hoods and the Woods: Rap Music as Environmental Literature* (2006) outlines the numerous environmental themes that can be found in rap. Yet as I described in the previous section, scholars and activists are only beginning to see the role of hip hop and why it is taking this unexpected position as a new outlet for green issues. I argue that hip hop is not opportunistically taking on the green ideology, but rather that in its cultural elements it is uniquely positioned to comment on and respond to the multifaceted and overlapping issues of race and ecology. Supporting this argument requires a look into how hip hop culture constructs itself as a fully-functioning alternative pedagogical culture and how the historical roots of the grassroot hip hop scene have more in common with the environmental movement than is typically thought by the mainstream.

This inquiry of hip hop's relationship to education is an underdeveloped part of the massive literature on hip hop which I will outline here (Alim, 2004; Spady et al., 2006; Viola, 2006). Hip hop's analysts, beginning with the landmark book *Black Noise* (1994) by Tricia Rose, repositioned hip hop from a music form that was seen by the popular

press as glorifying materialism and gangster life to the extension of the Black oral tradition rooted in politicized and racialized discourse. This attention to Black music extends from critical commentary on Jazz that sought to understand how music could be co-opted by a white-owned industry (George, 1988; Tate, 2003). Much of the literature on hip hop is part historical reference, recounting the many personalities and stories behind the genesis of rap music's songs (Chang, 2005; Mcbride, 2007; Reeves, 2009). Although hip hop has its origin in South Bronx, NY in the late seventies another vein of literature documents how the culture and music of rap has taken hold in the marginalized cultures of nations around the globe (Alim et al., 2008; Mcbride, 2007; Spady et al., 2006). Hip Hop's global potency among other groups like Black South Africans, the Maori of New Zealand or Koreans in Japan attests to its role as a bullhorn for issues of the oppressed (Condry, 2002). The cultural malleability and transposable nature of hip hop also shows why context based analyses of hip hop are necessary.

In addition to the social commentary on hip hop's history and political voice other social researchers take an ethnographic approach. In *Color-Blind Ideology and the Cultural Appropriation of Hip-Hop* (2006) Jason Rodriguez, explored how white youth consumed hip hop as an African American art but used the culture to deny their racial status as white Americans. Rodriguez and other ethnographers seek to put hip hop in a cultural matrix, one where hip hop and its racial themes interact with the systems of dominant social power (Spady et al., 2006). These researchers explore their cases by participant

observation of hip hop cultural scenes and interviews with artists and key informants (Smith, 2005).

Often mixed with ethnography is a final vein of hip hop research that takes a close look at the linguistic modes used by artists and participants in hip hop production (Alim, 2004). These scholars like H. Samy Alim explore how language and media are critical areas where hip hop is culturally constructed. The technical side of hip hop linguistic research explores how African American Vernacular English (AAVE) has changed with the styles of speech introduced with hip hop. Alim outlines what he calls a Hip Hop Nation Language (HHNL) that he views as the dominant speech pattern among the high school age Black and Latino youth. These patterns show regional variation but central themes like AAVE before it. Alim's ethnography of everyday language use by youth of the hip hop generation is also correlated with the rise of unique language patterns in the music itself. The sociolinguistic approach to hip hop points to the pedagogical implications for the culture. As hip hop is diversifying and entering many other social arenas, analysts like Jeff Rice have looked at the ethos of the culture as an alternative pedagogical philosophy, what he calls a "hip hop pedagogy," based on creativity, inventiveness and justice (Rice, 2003). Like Rice, many others have taken hip hop educational commentary even further by brining hip hop into the classroom and theorizing its role in reconfiguring teaching and learning in urban schools with Black and Latino youth (Morrell & Duncan-Andrade, 2002; Paul, 2000; Stovall, 2006).

Hip hop is more than just texts, words and speech, a closer look at its genesis shows strong positions on how teaching and education. One example is the hip hop duo called the Blue Scholars whom, in the track "*No Rest for the Weary*," write "*If they say anything, say: why is it? Class is in session 'til the teacher gets the pink slip*." The Blue Scholars, like blue collar workers, see themselves as working class versions of academics whose voice represents the knowledge of the marginalized people and they call into question the standard academic mores. This is often presented as a counter-point to the mainstream educational system that has historically failed urban, working class communities of color (Hill Collins, 2005). Lauryn Hill's landmark album *The Miseducation of Lauryn Hill* features a classroom desk as the backdrop of the cover art and in the title alone sets out to re-work what counts as education. In between the musical tracks of this album the listener hears recordings of an urban classroom where an engaging teacher talks with his students about their aspirations, social issues, and the philosophy of Love. One of the more famous old-school emcees known as KRS-one also gives clues to how academically and knowledge-oriented hip hop is at its roots: K-R-S stands for Knowledge Reigns Supreme and his song *You Must Learn* features a full Afrocentric rewriting of a history class.

The point is that hip hop is a vibrant knowledge culture, more akin to legitimized cultures of Western knowledge than is recognized (Alim, 2004). There is a tendency to

vilify hip hop for its commercialized forms that glorify sex, drugs, and gang life (Asante, 2009; Sharpley-Whiting, 2007), yet this critique often omits the fact that there are commercialized and popularly diluted and trivialized forms of most major discourses , including Western science. In a notable parallel to the environmental movement, the extent of hip hop's role as a vibrant and self-reflexive knowledge system was made clear when in 2005, the same year as environmentalism's proclaimed death, the emcee Nas published an album called *Hip Hop is Dead*. Nas cited the commercialization and co-opted stance taken by many rappers who are paid top-dollar to reproduce monotypic forms of rap that sell more for their beats than their message. Like true discourse there was a retort from within the hip hop community via KRS-one in his song *Hip Hop Lives*. He outlines his definition of Hip Hop which helps define the role of music and politics:

Hip means to know

It's a form of intelligence

To be hip is to be up-date and relevant

Hop is a form of movement

You can't just observe a hop

You got to hop up and do it

Hip and Hop is more than music

Hip is the knowledge

Hop is the movement

Hip hop's actual history is that it evolved as a harder and more street conscious version of the Black oral tradition as a response to the ghettoized conditions of the late seventies South Bronx, NY (Rose, 1994). Like Soul and Funk that dominated the music scene of artists of color from the 1950s to the 80s the music embodied a response to urban ills and politics (George, 1988). After much mainstream success the genre matured through the mid 1990s culminating in what African American historian Nell Irvin Painter calls hip hop's golden age (Painter, 2006). This era was marked by the development of many regionalized versions of hip hop and expanded beyond African American and Latino discourses to the global scene. This age of diverse voices erupted in a West-coast, East-coast feud personified by the West's Tupac Shakur and the East's Notorious B.I.G. Both of these rappers were gunned down in controversial shootings. Since that time the more commercialized versions of rap and gangsta rap, a graphic and vulgar form, has maintained popularity in the mainstream and on radio stations (Reeves, 2009). The overreliance on these forms is what spurred Nas to claim that hip hop had died.

Yet based on the work of inspirational rappers like KRS-one, hip hop has, in some areas, maintained its roots as a politicized and socially conscious movement. Since the millennium there has been a revival of social movement organizations labeling their organizations with the "hip hop" moniker and taking stands against violence, promoting

community, and raising awareness of social justice. Most hip hop studies focus on underground music scenes or the general texts but to my knowledge there has been no ethnography or academic commentary on the hip hop empowerment groups. These organizations such as the Hip Hop Summit Action Network founded in 2000 or the National Hip Hop Political Convention convened in 2002 and 2006, the Hip Hop Caucus, and Boston's Project Hip Hop are growing in size and efficacy in social movement politics and online and they are also producing more media about politics (www.hiphopcaucus.org). These groups comingle contemporary artists and the legacy of the Black Nationalist tradition. Ex-black Panther and Civil Rights minded organizers and activists are attracted to the reinvigorated hip hop movement (Hill Collins, 2005). Hip hop is known to be more secular but it has also succeeded in bringing in members of the faith-community who see the interconnectedness of hip hop style organizing and spirituality (Smith & Jackson, 2005). Though political music is nothing new with analogously strong lyrics coming through in the Punk genre for example, the explicit way the political stance is coupled with the hip hop frame in an organizational venue is historically unique: there is no National Punk Political Convention.

Similar to the environmental movement there is a branch of the hip hop movement devoted specifically to education. There are new "hip hop literacy" groups such as the Hip Hop Education Association (H2ED) in NY, the Hip Hop Educational Literacy Program (HELP) in Washington DC, an online program in hip hop literacy at the post-secondary

level created by the National Urban League, and other groups such as Literacy Through Hip Hop (LTHH) based in Canada, Brazil, and the US. These groups actively use lyrics, like those of KRS-one, to revamp the curricula of urban public schools. With an avidly Afrocentric stance the groups work with educators to blend hip hop with the classic textual canon. Ernest Morell is a scholar/educator who has documented this style of hip hop education, comparing Nas with Shakespeare for example, to increase engagement (Morrell & Duncan-Andrade, 2002). Both the hip hop education and political movements have taken on themes across the spectrum of social issues, and with a better understanding of how active this movement has been it is less surprising to see the emergence of G4G, a youth-empowerment organization that explicitly blends hip hop with sustainability.

Grind for the Green (G4G) is an organization that has responded to Van Jones's call to diversify the movement with dignified work opportunities. G4G works with the power of hip hop as a movement and as a medium through which to engage and activate culture. Hip Hop's presence in the green movement was first publicly noted in 2008 when a conference commemorating Dr. Martin Luther King Jr.'s life was held on the 40th anniversary of his assassination. Over 1000, youth-focused people attended *The Dream Reborn* conference that was heralded as a "racially-just and green" gathering. Van Jones, Majora Carter and Reverend Yearwood of the Hip Hop caucus were among the lead speakers. The hip hop style of the youth in the crowd and of the media that came

from this conference gave a new flavor to this sustainability meeting. In attendance were the people who would, a year later, found G4G.

Thus, in the social movement and educational scene hip hop is poised to address the critical ecological challenge. G4G, and others who have been doing the same work without labeling themselves "green hip hop" organizations, are the first to effectively reach urban communities of color with an critically race conscious and relatable green message. By the very demographic of its organizers these groups and individual artists are beginning to balance the Whiteness of environmentalists yet they are also creating new music that speaks to the interconnectedness of the movements for racial justice and ecological sustainability. Given hip hop's strong attention to alternative forms of knowledge and its penchant for reconfiguring standard notions to be viewed through the lens of marginalization we may expect a unique environmental discourse to be embedded in hip hop although this remains largely under-explored.

When the rich social texts of hip hop enter the urban classroom and are juxtaposed with standard tropes such as ecological science the way these texts are received and interpreted provides a view unattainable by textual analysis alone. To set up this comparison in my first study I compare and contrast the forms of knowledge about nature in the popular environmental science texts and in green hip hop. Next I take my field work outside the classroom to interview the young emcees who are at the forefront of creating hip hop that intertwines environmental and social justice themes.

Lastly, I take the sociologically-informed understandings generated by these studies of hip hop back into the classroom to induce rich interaction. By embedding hip hop in a social situation, rather than solely looking at texts, I will offer analysis of how hip hop addresses the critical ecological challenge for urban educators.

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CHAPTER 1

The Lorax, Hip Hop and Environmental Science: Comparing poetic verse with scientific textbooks on environmental topics

Introduction

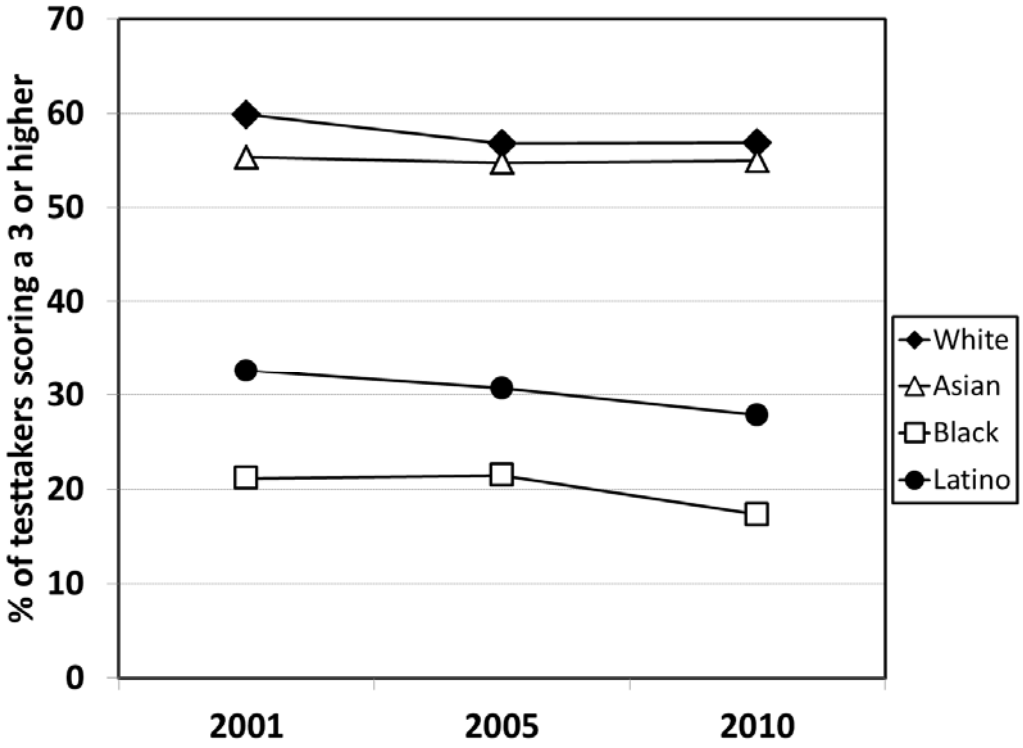
Readers of the College Board website for teacher resources covering the Advanced Placement Environmental Science (APES) exam will be intrigued to find Dr. Seuss's 1971 rhyming ode to environmental problems. The Lorax "*is extremely useful in generating an immediate interest in the underlying issues in environmental science*" writes the contributing teacher. At first, the poetic style of The Lorax seems like a mismatch with scientific content, what Mike Watts (2000) calls a "*creative trespass*" in his book on combining science and poetry in the classroom. However, poetry and environment have been linked in US culture in many ways (Cermak, 2012; Rosenthal, 2006). I personally have brought the words of hip hop artists, who are poets of a different type, into my environmental science classrooms. Like Watts and others who study the role of the creative voice in science education I endeavor to take a closer look at how poetry, in this

case hip hop, can find a place in environmental science to stimulate stronger engagement and interest in this field.

Analysis of data on APES performance shows that this science is not meeting the tests of equity. Since 2001, the APES exam has grown by a larger factor than any other science exam offered by the College Board.[2] Data that I assembled from 2001 to 2010 show more than a four and a half-fold increase in the number of exams taken (from 18,634 tests to 85,697 tests). But looking at both test taking and performance by race reveals that less than seven percent of the test-takers are African American, and twelve percent are Latino. Furthermore, rates of test-taking have not increased by more than 3% since 2001. In 2010, positive performance on the APES test (a score of 3 or higher) was achieved by 57% of White students as compared to 17% and 28% by Black and Latino/a students respectively (graph 1). The gap between white and Black students on the APES exam is larger than any of the other "physical" sciences: Biology, Chemistry and Physics B exams.

[2] Summary reports for all College Board Advanced Placement exams can be found at: http://www.collegeboard.com/student/testing/ap/exgrd_sum/2011.html

Graph 1.1. Comparison of Advanced Placement Environmental Science exam scores by race/ethnicity.



For researchers of science education, the idea of a racial disparity in achievement is nothing new, yet how these disparities manifests in complex topics such as nature and environment have not been fully examined. Obed Norman in *Marginalized discourses and scientific literacy* (1998) pointed out how difficult it can be to maintain and sustain non-normative forms of knowledge in science such as those that include social justice and identity because of the emphasis on "objective" method and ways of legitimizing sources of knowledge. In the environmental context, scholars such as John Hannigan have pointed out the reductionist, Eurocentric and scientific tenor of ecological knowledge in the US (Hannigan, 2008). Despite the potential function of science

education as a hegemonic force, within the field there is a strong call for turning to creative sources to increase engagement (Pugh & Girod, 2006; Taylor, 1997; Watts, 2000). Poetry is one such alternative and creative discourse that has been shown to improve general science education and diversify the linguistic repertoire allowed in classrooms (Hildebrand, 1998; Watts, 2001). The use of the poetic Lorax by an educator of environmental science suggests one way to begin breaking down the hegemony of scientific forms of reading, but can a style of poetry like hip hop also address issues of equity in science?

The forms of education on environment and global processes such as climate change are particularly relevant because of the widespread attention to the ecological crisis in scientific, political and social science fields. As ecologically-focused careers and political movements arise, activists such as Van Jones are calling for the "green wave to lift all boats," not just those of the elite or racially privileged (Jones, 2008). Investigating environmental science education as it proliferates into urban areas with diverse students is a key site to learn of how the science education system may be playing a role in reproducing the norms of who is getting the most opportunity in the field. Jones has also touted the importance of hip hop as an emergent but overlooked cultural voice for environmental issues and more research into the "green hop" connection is developing (Cermak, 2012). Like the Lorax, the voice and rhythms of hip hop seem, at the outset, to

contrast with scientific literacy but allowing this trespass also holds promise for understanding how to blend more diverse perspectives into scientific discourse.

Taken together, the racial disparity in the APES performance data, the need to disrupt the hegemonic forms of language and learning in science, and the importance of ecological discourse in general, create an opportunity for analyzing how alternative texts on environment compare to the standard texts so that they may be used to increase student engagement. Although there has been a call for more of an infusion of the poetic there are still few case-specific, methodical approaches to describing how alternative texts articulate with the standard texts. In the present study I will directly compare the lyrics of "green hip hop" that I use in my teaching with leading environmental science textbooks on specific topics such as global climate change, food, freshwater and endangered species. The reference to the Lorax and its relation to environmental science provide a segue into the reasoning behind this comparative content analysis.

An example of how poetic words can educate about environmental issues is warranted, starting with The Lorax:

"You're glumping the pond where the Humming-Fish hummed!

No more can they hum for their gills are all gummed.

So I'm sending them off, oh their future is dreary.

They'll walk on their fins and get woefully weary

in search of some water that isn't so smeary." (Dr. Seuss, 1971)

Dr. Seuss's verse on water pollution from the Lorax intertwines a call for water conservation and a statement about the values of the inhabitants' lives, the "humming fish." This verse is directed toward a main character called the "Once-ler," a man who gets directly called out for his greedy, profit-hungry actions that result in environmental catastrophe. Dr. Seuss made clear delineations of whose agency is valued as positive and negative, not shying from imbuing a sense of justice into his environmental tale. Poetry allows Suess to create words, creatures and concepts, such as "glumping," that can be inserted into an environmental narrative without sacrificing a clarity of the process by which water can transmit pollutants. This freedom and rhyming scheme help the reader see their content in alternative cultural frameworks; in this case an imagined, Seussian one.

Mos Def, a hip hop artist who is known for producing socially conscious lyrics, puts water in a different cultural framework in his 1999 track New World Water:

"There are places where TB is common as TV

Cause foreign-based companies go and get greedy.

The type of cats who pollute the whole shore line

Have it purified then sell it for a dollar twenty-five."

Mos Def paints a more confrontational and politically-charged version of what is wrong with our water cycle in these lyrics, linking poverty to the actions of multi-national corporations and bottled water. Like Suess's "Once-ler," there is a clear naming of the perpetrating agent with other value-laden words like "greed" to qualify the situation. The poetic styling of both verses linguistically links Seuss and Mos Def's narratives on water and shows potential for this style of environmental poetry to create engaging discussions in the classroom. Gaell Hildebrand in her paper *Disrupting hegemonic writing practices in school science: Contesting the right way to write* (1998) discusses how incorporating poetry into the science classroom enables new ways of thinking and confronting biased assumptions of Western Science. Another article by Pugh and Girod (2006) concludes that "science education has a great potential to expand and transform experience, but we fear that its transformative and aesthetic potential is not fully actualized."(Pugh & Girod, 2006, p. 24). One of their recommendations calls for a stronger use of metaphor to "re-see" and expand the perception of commonly recognized concepts. This re-visioning and metaphoric re-tooling is a hallmark of talented rappers and other lyrical authors like Dr. Seuss, and it follows that the remixing of environmental ideas via hip hop could help enable a more transformative and empowering environmental education.

Despite the similarity of the Lorax and some green hip hop, there is still more research required to help educators understand the utility of hip hop. Like others who have studied the use of hip hop in urban classrooms, I see the power of rap to bring themes and questions of justice and racial and cultural identity. For example, Ernest Morell and Jeff Duncan-Andrade used a track by the rapper Nas alongside a Shakespearean sonnet when working with urban high school classes, asking them to show their knowledge by comparing the themes in both the rap song and the sonnet (Morrell & Duncan-Andrade, 2002). This theme of comparing texts in order to build connections between hip hop style language and academic language is key for working with diverse students whose speech styles more closely align with those in hip hop (Alim, 2004). These hip hop educators use the lyrics of the songs to intentionally bridge the hip hop perspective on justice and identity to classic texts. Nonetheless, a more rigorous analysis of how hip hop texts compare to standard texts in any discipline is needed. This is the impetus for this study where not only hip hop, but also the science textbooks are examined.

Examining the textbooks of environmental science is a worthy analysis in itself, questions of justice and identity. Prior research on general science shows a history of omitting political themes . Michael Apple and Linda Christian-Smith who edited "The Politics of the Textbook" (1991) asserted that textbooks are "*at once the results of political, economic, and cultural activities, battles and compromises. They are*

conceived, designed, and authored by real people with real interests." (Apple & Christian-Smith, 1991, pp. 1-2). As the APES data show, we may add the theme of ecology to this list of axes around which social power and decisions pivot. In the same volume, another chapter entitled "Race, Class, Gender and Disability in Current Textbooks" concluded of the Reading and Language Arts, Science and Mathematics fields that "*treatment of diversity in textbooks has not improved much over the past fifteen years*" (Sleeter & Grant, 1991, p. 101). Like others who have critiqued the epistemological stances of science textbooks and scientific disciplines, I believe that how these texts make use of themes of identity and social justice are a factor in why we see youth of color and other marginalized groups engage or disengage with the field (Calabrese Barton & Osborne, 1998; Norman, 1998).

I also question how to simultaneously analyze hip hop with the science textbooks. In structure, volume and language, the two forms of texts differ to the extent that employing alternative methods of content analysis is necessary for a fair comparison. The aforementioned textbook study by Sleeter and Grant (1991) examined the iconography of textbooks in all major areas (social studies, reading and language arts, science and mathematics) and found a lack of diversity and a paucity of depictions or discussions of social class. Other studies focus on frameworks such as feminism or nature of science to show how current physical or social science textbooks represent these epistemologies (Abd-El-Khalick, Waters, & Le, 2008; Campbell & Schram, 1995).

All discourses have gaps in the depth of topics they can cover and treat within a larger narrative such as environment. Rather than only highlight these gaps, I want to show how two forms as different as hip hop and science compare. There are many assumptions in stating that short poetic verses like The Lorax or a hip hop song can complement a textbook and I want to refine how we as researchers approach comparisons of this sort. This comparative stance, in my view, will allow a stronger bridge to be built between these disparate discourses.

Comparing a 600 page textbook to a six verse song may seem a stretch, but by using common topics within a master environmental discourse I can analyze how each form of text differed in their approach to the topic. There are many topics within environmental thought but based on a review of the textbooks used in this study and the hip hop tracks I have used to complement them in my classrooms I chose five that they have in common: 1) Global Climate Change, 2) Freshwater, 3) Food, 4) Species and Diversity, and 5) Energy and Technology. With these topics as the bridging content between hip hop and science, I also used two criteria of focus, how they talked about social justice and the themes of identity that were present. The first stage of the analysis is a broad quantitative look at how the environmental science textbooks use themes of justice and identity. Following this I provide a more qualitative look at the textbooks and hip hop tracks on a per topic basis.

Methods

For the content analysis I used the first five textbooks that can be found on the college board website under APES exam resources.[3] Digital copies of the most recent editions of the textbooks were obtained through CourseSmart (www.coursesmart.com). The digital editions enabled a comprehensive searching of the full text for keywords related to social justice and identity. Only the body of the text (from page one to before the appendices and glossaries) was used which amounted to 2,884 pages of text. For each text book I chose the chapters that most fully treated the topics (Global Climate Change (GCC), Freshwater, Food, Species and Diversity, Energy and Technology) and also the first and last chapters as comparisons. A summary of the texts and the pages used is provided in table 1.1.

Table 1.1. Environmental Science Textbooks used and page summary per topic.

				Pages in Sample				
Authors	edition	year	total pages	Global Climate Change	Water	Food	Species & Diversity	Energy & Technology
Miller & Spoolman	17	2011	675	61	56	39	46	64
Enger & Smith	12	2011	450	24	30	44	29	58
Cunningham & Cunningham	12	2011	578	27	49	42	45	45
Botkin & Keller	8	2011	567	33	58	24	25	78
Wright & Boorse	11	2011	614	32	51	49	52	72
		total	**2884**	**177**	**244**	**198**	**197**	**317**

[3] Textbook description can be found at apcentral.collegeboard.com/apc/Pageflows/TeachersResource

Stage One: Social Justice and Identity Content Search for Textbooks

It was necessary to produce a profile of the environmental science textbooks with regard to how they used terms related to social justice as well as those related to identity. For the purposes of this content analysis I included as "social justice terms" a range of keywords used in contexts where social justice values are asserted. Similar to Kaputska et al (2009) who searched writings on teacher education for social justice content, I recognized that value terms (such as "justice"), events (such as Civil Rights), and population descriptors (such as poor or poverty) are all related to social justice and also are used in various contexts.

A two category scale of social justice (moderate and strong) was used for this part of the search. A much wider social justice term list was used to initially screen the textbooks but I then restricted the search to terms that were used at least once in more than one textbook. The strong social justice words that qualified were Justice, Equity, Racism, Slavery, Oppression, Activism, Protest, Terrorism, Exploitation, Violence, Corruption and Grassroots. Moderate Social Justice words were Poverty, Poor, Charity, Foreign Aid, Immigration, Civil Rights, Community, Fair, Ethical, and Moral. The moderate group contains a strong mix of event, value, and descriptor words but stands as a contrast to the more value-loaded strong category. This differentiation was based on studies of social justice discourse that note rhetorical differences in how words such as "activism" are used in comparison to words such as poverty or charity with the former indicating a

stronger ideology of social justice (Wade, 2000). The categories would aid in comparison of the topics and chapters. These words and any of their variations, for example justice and injustice, were searched and tallied for the entire text as well as within each topic. The actual count of the terms was on a per page basis, where any page that included a word was counted and thus if a page had more than one word in a given category it was only included once. This content analysis is employed primarily to get a sense of the frequency and distribution of social justice terms in the textbooks which was then used to guide a more qualitative textual analysis.

For the identity category the key terms were Race, Ethnicity, Minority, Socioeconomic, Social Class, Gender, Spirituality, Religious, Identity, and African, Latino/Hispanic, Asian and Native American. The present analysis is focused on the perspective of US youth and did not include references to other nations. By using these groups of terms and obtaining the number of pages with mentions of the categories I could compare the topics (food, water, etc.) and the other chapters of the texts. By standardizing on a per page basis I could also aggregate the data for all textbooks and measure general percentages of pages with mentions of any of the categories.

Stage Two: Analysis of Science Texts and Hip Hop Lyrics for Five Environmental Topics

The shorter length of the hip hop songs did not necessitate full tallying of categories as with the textbooks. Instead, the results from stage one were used to help distill

information from the textbooks so that more robust inferences could be made about how much each topic dealt with social justice and identity and subsequently compared to the hip hop themes. There were a total of eight tracks used that are summarized in table 1.2 with indication of which topics they represented in the present analysis. Some songs were used for more than one topic.

Table 1.2. List of Hip Hop Songs used in this study with topics covered

Topic	Song Title	Artist(s)	year	Album
GCC/ Energy	Rising Down	The Roots	2008	Rising Down
GCC/Energy	Give It Up	J-Live & Thes One	2005	Impeach the Precedent
GCC/Energy	Green Anthem	First Be, Tem Blessed, Outspoken	2009	Blessed Energy
Water	New World Water	Mos Def	1999	Black on Both Sides
Food	Time For Change	Wil Bullock	2005	Time for Change
Food	Wheat Grass	DJ Cavem (feat. Cee K)	2010	Teacher's Lounge
Species	Caged Bird Part 1	Zion I (feat. Brother Ali)	2009	The Take Over
Species	I am the Bee	Tem Blessed	2009	Blessed Energy

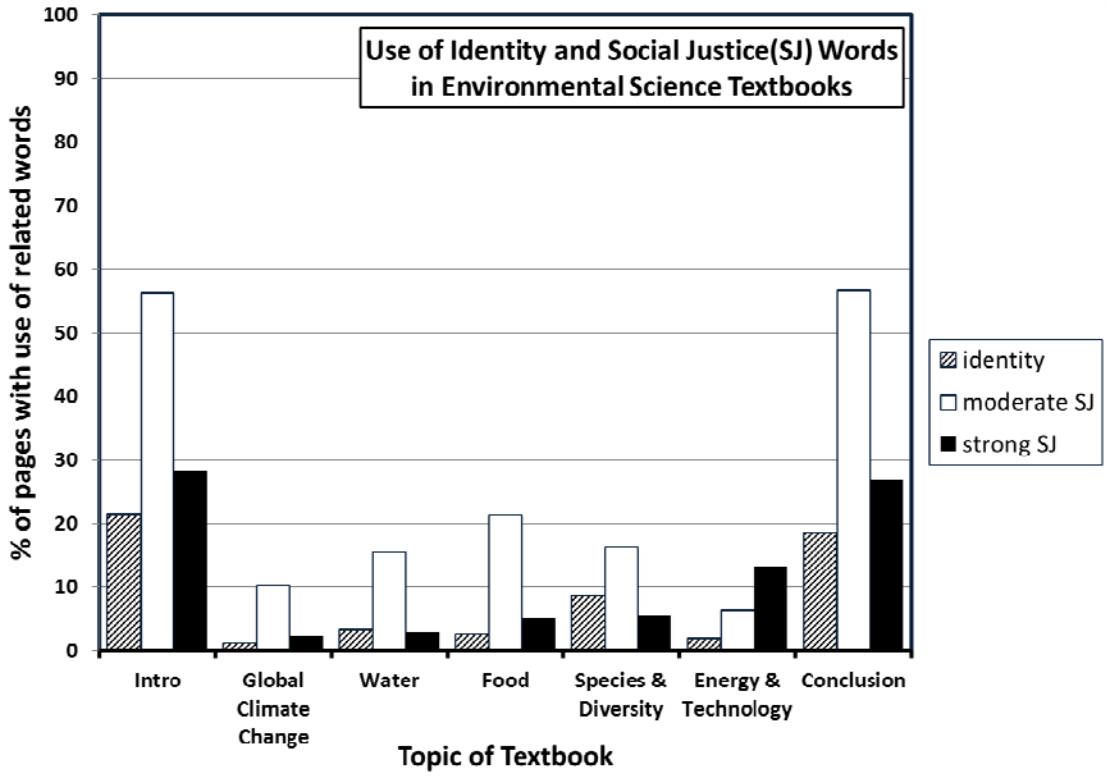
For all of the hip hop lyrics, I examined how they covered the topics in question with a focus on social justice and identity themes. A summary of each topic with examples from the lyrics juxtaposed with the themes from the science textbooks will be presented after the results from stage one.

Results

Stage One: Social Justice and Identity Content Search for Textbooks

There were numerous pages that included both strong and moderate social justice(SJ) terms. Although there were some differences among the five textbooks as to the use of social justice terms the trends were similar for the textbooks and they were pooled for the remainder of the analysis. One notable trend that emerged was that the use of social justice terms was much more pronounced in the introduction and conclusion chapters than in other parts of the textbook including the chapters that covered the topics investigated here. In these beginning and ending chapters, moderate SJ words were used in more than 50% of the pages of the introduction and conclusion chapters and strong SJ words were used in greater than 25% of both. In contrast, only the food topic had greater than 20% of pages with use of moderate SJ words and only the energy and technology topic had strong SJ mentions that exceeded 10% of pages. The identity category was used less in general across all topics but followed similar trends. The mention of identity themes was highest for the species and diversity topic but still less than 10%. These results are summarized in graph 1.2.

Graph 1.2. Use of Identity and Social Justice Words in Environmental Science Textbooks



The results of the broad textbook content analysis show that the environmental discipline uses a lot of references to social justice and some degree of themes related to identity. A general look at the use of these terms does not illustrate how integrated the social justice and identity themes are with the topics in question. Environmental textbooks do a good job of bringing in social themes at the beginning and end of the book but for any given topic the percentages are much lower. In contrast, the hip hop tracks make mention of these social justice themes in all of their lyrics in each of the topics. The size of the hip hop texts in relation to the use of the social justice and

identity themes did not necessitate a quantitative analysis and this content is dissected further in the qualitative analysis. These differences show that not just the presence of SJ themes but how they are integrated with topics can be one distinguishing factor of creative verse and scientific discourse on environment.

Table 3 shows the top terms for each topic that were found in the textbook analysis.

Table 1.3. Top themes found in each topic of the textbooks.

	Topics						
Category	**Introduction**	**Global Climate Change**	**Water**	**Food**	**Species & Diversity**	**Energy & Technology**	**Conclusion**
IDENTITY	Religion (10), Native American (7)	Native American (2)	Native American (4), Social Class (2)	Native American (2)	Native American (8), Spirituality (4)	Native American (5)	Spirituality (6), Religion (5)
SOCIAL JUSTICE							
Moderate	Ethical (23), Poverty (21)	Poor (6), Ethical (5)	Poor (17), Community (14)	Foreign Aid (20), Poverty (18)	Ethical (15), Poor (7)	Poor (5), Civil/Civic (4)	Ethical (18), Community (18)
Strong	Justice (17), Slavery (4)	Equity/ Equality (2)	Activism (2), Protest (2)	Grassroot (2), Corruption (2)	Grassroot (5), Protest (4)	Terrorism (32), Protest (7)	Justice (7), Terrorism (6)

***Numbers in parentheses indicate number of mentions when added for all textbooks sampled**

From this table a few general results can be seen. Again, similar to the trend shown in graph 2, the introduction and conclusion chapters had the highest use of the terms related to identity and social justice. The chapters that covered Global Climate Change had the fewest combined mentions of social justice terms and also shared the lowest use of identity terms with the chapters about food. In comparison, the food topic had the highest number of combined moderate and strong social justice terms driven by the

moderate terms “foreign aid” and “poverty.” The highest number of strong social justice terms was the Energy and Technology topic that was driven by the mentions of the word “terrorism.” The highest number of identity terms was for the Species and Diversity topic that was driven by the term “Native American.” By showing the dominance of certain terms, these could then be reviewed for their specific contexts when comparing with the lyrics from the hip hop tracks.

Stage Two: Analysis of Science Texts and Hip Hop Lyrics for Five Environmental Topics

Topic One: Global Climate Change

For the science textbooks, the global climate change topic had the fewest combined mentions of moderate and strong social justice terms and also the lowest use of identity terms. For example, one of the only uses of an identity term was “Native American” in reference to how scientists use wood from Native American homes to look at tree rings as indicators of past climate (Botkin & Keller, 2011, p.439). In another instance from Miller & Spoolman (2011) textbook, the Native identity term was used to point out localization of toxins in native peoples when explaining how GCC affects toxins moving in the environment, “It also explains why polar bears, sharks, and native peoples in remote arctic areas have high levels of various toxic pollutants in their bodies.” (Miller & Spoolman, 2011, p. 476). This generalized reporting tone and use of identity as a

demographic category on-par with other non-human species is an example of the abstract way the term was used.

There were also only two cases of strong social justice words in the GCC chapters, in this case the term “equity” in reference to “intergenterational equity” a term used to emphasize the impacts of climate change on future generations. Cunningham and Cunningham (2011) write “The Stern report says that without action, at least 200 million people could become refugees as their homes are hit by drought or floods. Furthermore there’s a question of intergenerational equity. What kind of world are we leaving to our children and grandchildren? What price will they pay if we fail to act?” (Cunningham and Cunningham, 2011, p. 336). The text moves on to suggest actions such as “emissions trading” and “helping poorer nations” but does not discuss inequities within US borders or use identity as a variable. In general, for the GCC topic, the prescription for addressing climate change is with international policies such as the Kyoto Protocol which sought to have developed nations reduce their carbon emissions. The emphasis of the textbooks was on greenhouse gas emissions and how policy could be used to regulate them at the international scale. Thus, the GCC topic constructs a space where inequalities of the impacts are minimally discussed and attention is shifted to broad, national and global level perspectives.

In comparison, the hip hop artists connected Global Warming to whom it was most impacting and race relations within the US. In the Roots song Rising Down (2008) they write:

Between the greenhouse gases

and Earth spinnin' off its axis

got mother nature doin' back flips

the natural disasters

it's like 80 degrees in Alaska

you in trouble if you not an Onassis

…

I'm an African American

They sell drugs in the hood

but the man he move the medicine

He'll prescribe you Augmen for everything

a little stuffy nose tell you get some Claritin

you know I'm hip to it

and it's hard to claim the land

when my great, great, great grands were shipped to it.

In these lines there are familiar scientific forms of labeling problems related to Global Climate Change such as ‘‘greenhouse gases,’’ yet they are embedded in lyrics with themes related to race and social inequality. The line “*you in trouble if you not an Onassis*” refers to the wealthy Onassis family and shows the social class dimension of who environmental problems affect most acutely; the working class and poor (Bullard & Chavis, 1999; Taylor, 2000). Further, the line “*it’s hard to claim the land when my great great great grands were shipped to it”* is a direct reference to slavery and how this influences a collective reluctance to see the immediacy of land relations. This slavery-environment connection is corroborated in research on African American’s connection to the Earth, for example in Kimberly Smith’s book African American Environmental Thought (2007). The multi-thematic rap lyrics can be a conduit to conversations about social issues, balancing the bias that science texts do not often discuss social class (Sleeter & Grant, 1991), and painting science in a fuller social context.

J-Live and Thes One used the concept of medicine and drugs to bridge to the questioning of the corruption and greed in the fossil fuel economy in their track Give it Up (2005).

A lot of scientists are warning

about the global warming,

I’m just wondering if you seeing what I'm seeing,

Cuz big oil got you fiendin' like crack,

Better yet—

big medicine they got you on the comeback

And if you wonder how they got it like that,

Big wig politicians getting' real big kick backs,

Big tobacco lettin' little man choke,

on first hand,

Not to mention second hand smoke

Big cars do the same in the streets

Every time we push the pedal

the Earth takes a toke,

Here the artists bridge from global warming to oil and air pollution, using the opportunity to personify the Earth as someone addicted to our effluent, the Earth smokes (tokes) our pollution and experiences repercussions just as we do when smoking other illegal drugs or cigarettes. Just as they moved seamlessly onto the topic of slavery in The Roots song, the hip hop artists view global warming as a byproduct of runaway capitalism, oppression, and a corrupt government. There are clear corporate culprits labeled for the GCC issue and interpersonal relations are stressed over policy initiatives. Notably, The Roots also used their song about global warming to make a statement about the racism of society that villifes the urban drug dealers and lets the

pharmaceutical companies make millions of dollars, “they sell drugs in the hood but the man he move the medicine. As Pugh and Girod (2006) called for, they use metaphor to help the reader “re-see” GCC not as solely about the planet but about the way we as people treat each other and ourselves. By connecting the theme back to relevant issues of drug use and addiction they help humanize the abstract issue.

Topic Two: Water

Similar to the international focus of the GCC cases, there was a strong focus on “less-developed” or “poor” nations when the textbooks covered Freshwater issues. The textbooks used a rhetoric of “community” to talk about how water is important to community well-being, but this discussion was not often elaborated in the paragraphs surrounding the mention of this term. For example, Botkin and Keller (2011) write, “Using wetlands to treat wastewater is particularly attractive to communities that find it difficult to purchase traditional wastewater treatment plants” (Botkin & Keller, 2011, p. 418) The word community was used because it is the level at which most water issues are measured and governed, and it was used less to discuss any social justice implication of water issues. For the identity category, the term Native Americans was dominant and used to refer to historical cases where Native Americans managed water in ways that inform current technologies such as canals and aqueducts. Another identity term for this topic was “social class” and although it was rare it did discuss how the price of water may affect poor and “lower-class” citizens in developing nations. Cunningham

and Cunningham, in their chapter on Water Use and Management state, “A typical poor family in Lima, Peru, for instance, uses one-sixth as much water as a middle-class American family but pays three times as much for it. If they followed government recommendations to boil all water to prevent cholera, up to one-third of the poor family’s income could be used just in acquiring and purifying water.” (Cunningham & Cunningham, 2011, p. 384). This example shows again an emphasis on international examples of poverty, not US cases. We can also see how the agents involved in this description of a non-ideal situation are the government. Examples of empowering solutions or the relations of people working on water projects are underdeveloped.

One excerpt from Mos Def’s New World Water (1999) shows a deep range of how water is used in a hip hop narrative.

New World Water make the tide rise high,

Come inland and make your house go “Bye”

Fools done upset the Old Man River,

Made him carry slave ships and fed him dead nigga

Here Mos Def references Old Man River, the name given to the Mississippi by African American slave communities. Similar to how the hip hop track in the GCC topic references slavery and land relations, this track uses slavery to call into question our

relationship with water as a natural resource. For Mos Def, the social injustice that is brought up by the dead slaves in the riverbed can literally pollute water in ways deeper than chemical toxins. This reference to slavery is placed in the first verse of this song also demonstrating the importance the artist places on this social aspect of water.

As I mentioned in the introduction, New World Water also discusses capitalism and privatization. Mos Def puts this connection clearly "And it's about to get real wild in the half/ you be buying Evian just to take a fuckin' bath." He ends his song with the lines "used to be free/now it cost you a fee/because it's all about getting that cash, money." This central question of how water privatization has led to a large market for bottled water is challenged and linked to the general capitalist problems of "getting that cash." These questions also help stimulate a discussion that expands beyond pollution into how water is managed in a consumer market. Whereas textbooks may shy away from fully examining corporate control of water, Mos Def uses well-known brands such as Evian to add relevance and potency to his critique of the water market.

Together, the textbooks and new World Water help reiterate the basic scientific principles of water as a form of matter that cycles through our environment. Like the finite water cycle, the hip hop narrative adds a historical and justice dimension, reminding the reader that the social injustices can also come back around to haunt us until they are addressed in conjunction with environmental problems.

Topic Three: Food

The food topic had the highest number of mentions of moderate social justice words of any other topic. Like the water topic, the focus was heavily on international cases and the most dominant terms were "foreign aid" and "poverty" which were used in reference to helping less-developed nations. Wright and Boorse (2011) provide one interpretation of the food crisis and why aid is needed, "Throughout the world, three decades of rapid population growth have left hundreds of millions dependent on important food or food aid, while one in five in the developing world remains undernourished. As the world population continues its relentless rise, no resource is more vital than food." (Wright & Boorse, 2011, p. 296). In this example, the cause of the food problem is identified as population rise which is used to build a narrative around food and hunger. In general, food was framed as a global crisis of the "developing world" and many case studies focused on Fair Trade commodities such as coffee. The food topic had a scarcity of terms related to identity, with only a small reference to Native American traditional growing practices in relation to industrialized agriculture.

The hip hop tracks dealing with food were local, youth and education focused and race-conscious. DJ Cavem Moetivation in his track *Wheat Grass* (2010) with guest rapper Sticman of Dead Prez, speaks of the importance of connecting hip hop and growing food.

I got a job with some teens

Teaching hip hop history and how to grow greens

Hard skills, big wills, and it's the real deal

Green jobs, green thumbs, up in the green field

And ain't nobody be ditching my class

I got that lifelong lesson – don't let your life pass.

…

Sunlight on the seed will germinate it

Plant it in rich soil and watch the water permeate it

Life is a cycle, harvest is celebrated

But if there is no growth then life is exterminated

This is a science that was taught by the natives

Who didn't seek to dominate nature, but innovate it

Cultivation of crops, the law of regeneration

You reap what you sow, you only eat what you grow

DJ Cavem in particular is a notable artist who not only writes lyrics about food and nature but extends beyond artistic work to engage with youth in his community to teach them "how to grow greens" and also keep the history of hip hop alive through

discussions and education. The second verse, rapped by Sticman, gives the basics of the plant growth cycle and then, similar to the textbooks, references the native style of growth in contrast to the modern exploitative forms.

Another hip hop and soul song about food is Wil Bullock's *Time For Change* (2005) where he points out the inequalities for urban citizens. These are exemplified by food deserts, areas with no places to buy healthy foods that are also inundated with fast food chains. He writes:

It's time for a change now;

I'm making a plan

People holler stand up but ain't taking a stand,

We should boycott MickeyDs and Burger Kings,

Assume logic,

Hit the Food Project and learn a thing or two,

Target our youth,

Teach them how to grow food in their own

Back yards make the future old school,

And it's so true,

Go down the street in any hood,

There ain't a decent supermarket

How is that any good?

A common theme in the hip hop tracks about food is the "target our youth" idea and much of urban food activism with communities of color happens through starting urban gardens and farmers markets. In the chorus of *It's Time for Change*, Bullock writes "it's not all right for fast food chains to target our youth for monetary gain," showing that the culprit is corporate advertising, not population growth as depicted in the science textbook. In the positive sense, the hip hop tracks focus on the theme of regeneration and the life that food brings, a natural link to young people who are also the targets of fast food advertising campaigns. Bullock himself worked for the Food Project, a non-profit organization promoting food justice that is mentioned in this excerpt. The idea of "making the future old school" is an important theme that shows the value of history in contrast to creating new technologies that will solve current food problems.

Both the hip hop songs and the environmental science texts emphasize the current problems with the production and distribution of food. The strong international focus of food and helping food-poor nations can be complemented by the local and youth-centered hip hop perspective on food, both emphasize inequality of how food is distributed. While there was some semblance of referral to native culture this seems like a strong theme that could be more fully addressed in both. The extension away from political and technological discussions toward emphasis on the cultural practice of growing one's own food and the learning this requires is a key site for student empowerment.

Topic Four: Species & Diversity

When it came to discussing the role of species in an ecosystem the term "ethical" was the dominant social justice term. These references were exclusively framed as ethical questions of what is human society's right to drive a species to extinction, or when to intervene. In one example from the Wright & Boorse (2011) text, they claim,

> **"Many Native American religions have a strong environmental ethic (a system of moral values or beliefs); for example, the Lakota hold that humans and other forms of life should interact like members of a large, healthy family."** (Wright & Boorse, 2011, p. 137)

The species and diversity topic also had the highest amount of mentions of identity terms, using "Native Americans" as examples of populations who intrinsically valued non-human species. Drawing on cultural relativism was a strength of this topic for the science textbooks that posed questions as to why we value some species, such as whales, but not less charismatic ones like slugs or insects. There was also some discussion of how these ethical questions inform policies such as the Endangered Species Act. One of the assertions found in the Cunningham and Cunningham book was that the American pioneers intentionally decimated the Bison population to cause hardship for the Native American peoples who relied on them. Much of the discourse was about US native species so this also kept this topic more domestic in scope.

For the hip hop artists, endangered or "pest" species were used as a metaphorical link to their own lives. Several of the emcees took the role of threatened or stigmatized species to draw parallels to their own situations in a racist and oppressive system. These lyrics did not all have a victimized tone, the emcees use the very qualities of these species that most environmentalists overlook to offer insight on how to resist oppression. One of the clearest example is the group Zion I, who offer a new spin on the Caged Bird metaphor used by Maya Angelou, connecting to the larger African American oral tradition. In their track Caged Bird pt. 1 (2009) they write about a pigeon:

Our voices ring in the emptiness

That helpless moan of wings that were never spread

My song brings the evidence

Allowing me to sing what was never said

Parrots look down on the pigeons who

Comb the streets for old trash to eat

But my head's up as I strut through this bitch [place]

Cause my beak doesn't repeat my master's speech

The pigeon is used as a symbol of urban nature, one that has been stigmatized as "rats with wings" for example, and looked down upon in a similar manner to how the urban

poor and communities of color have been stereotyped. They juxtapose the pigeon with the parrot, a mimic, to begin a conversation about what it means to be authentic. The artists speak of "wings that were never spread," a metaphor for the untapped potential of many urban youth. In Angelou's Caged Bird, the song that the captive bird sings is about freedom and this track reiterates this message. But in addition to the comparison of the urban citizen in a negative sense, they remind the listener that having an authentic, un-coopted voice is more important than image and unmet potential.

In another case Tem Blessed, a Cape Verdean American rapper and performer looks at the world through the eyes of the honeybee.

I am the Bee

Pollinate truth if you choose to see

Pollinate the youth to truly be free

Pollinate love let's all agree, I am the bee

Keystone species we need these bees, honey

They pollinate most of the things we eat, funny

They do this for free, without a fee, billions in produce produced nationally

Now millions of bees have abandoned their hives

and if they disappear in four years the human race will die.

Now that's a quote from a famous scientist like Einstein,

it's logical to anyone with half a mind.

Tem Blessed was responding to the real ecological phenomenon of Colony Collapse Disorder (CCD), where beekeepers have been finding abandoned hives for unknown reasons across the nation. This issue garnered national attention as the success of the bees is intimately linked to the productivity of the food system (Cox-Foster & vanEngelsdorp, 2009). Tem Blessed relayed this message in his rhyme, hinting at the economics of bee pollination, making accessible what ecological economists Costanza et al (1997) call "ecosystem services;" those processes that an intact ecological system accomplishes for free. Yet in taking the role of the bee he also played upon the concept of pollination, allowing him to bring the power of youth and knowledge into the message. For Tem, the greatest loss incurred by CCD was not the insects themselves but what their key pollination behavior represents for a social milieu; the idea that we must continue to share and connect with each other. His words allow the bee to become more than an ecological and economic warning sign, and emphasize the social power of producing fertile and justice-centered ideas.

Used in conjunction, the environmental science textbooks and the hip hop tracks that talk about non-human species precipitate strong discussions for how to expand an ethic of care to those who do not fit into the mainstream. The hip hop tracks provide a

critical expansion, or rather a condensing, of the endangered category by including their own communities of color in the category. By embracing a type of discourse that moves past a victimized "saving" mentality towards the marginalized and asking questions about the overlooked redemptive qualities of these species there can be a deeper discourse about why and how environmental scientists think about helping a troubled ecosystem and social world that are both losing diversity in related ways.

Topic Five: Energy & Technology

The Energy and Technology had the highest concentration of strong social justice words of any other topic, including the introduction and conclusion chapters that were generally the highest. This was driven by the term "terrorism" which was in reference to two main areas 1) in relation to the war against terrorism or the war for oil controversy, and 2) in relation to the susceptibility of power plants and energy sources to terrorist attacks. Miller and Spoolman (2011), for example, in their discussion of energy alternatives list as a core question, "How vulnerable is the resource to terrorism?" and with an inset labeled "Oil consumption, Terrorism, and National Security" they write, "According to a 2005 report by the Institute for the Analysis of Global Security, almost one-fourth of the world's crude oil is controlled by states that sponsor or condone terrorism. The report points out that buying oil from such countries helps fund terrorism." This connection to war and security was complemented by a discussion of policies in place that regulate the use of energy resources. There was also

a strong orientation to alternative energies such as wind, solar and wave power but these were not implicated as political issues and instead were framed as technological advances and maximizing energy efficiency.

Like the endangered species topic, the hip hop artists reworked the very ideas of "alternative energy" and "renewable and natural resources" by showing how humans, in their soul and voice, harbor their own forms of untapped energy. In the track called The Green Anthem, Ben Gilbarg aka First Be collaborated with two other artists, Tem Blessed and Outspoken. The chorus of the Green Anthem reads:

Everybody shine, be solar powered

Speak your mind, that's wind power

Move your H_20, wave power

Organize, people power!

You got the soul power!

Here the human is re-infused into nature, our own inner soul shining outward is likened to solar power and our voices fuel the wind. Recognizing that humans are made mostly of water and that our own movement is like a wave, they also connect us intimately to the natural resources we consume. Ultimately, the metaphors all come back to the soul, the power to the people and real community organizing that grass-root hip hop

has always embraced. For the artists these were the forces of nature that would bring change. This positive view on humans as energy hubs comes from a related skepticism of technology that also showed up in some hip hop tracks. In the Roots song Rising Down (2008) they show a critique of the values in technology.

Look at technology,

They call it downloading, I call it downsizing

Somebody follow me

Does a computer chip have an astrology

and when it fuck up could it give you an apology?

Despite being a fairly technological medium in its reliance on digital sampling and turntables, many hip hop artists show a mistrust of the overreliance on technology, an ideal that contrasts with the technologically-laden solutions that are professed by scientifically-trained environmentalists. This perspective helps set a limit to the role of techno-optimism that characterizes many anti-environmental discourses but also helps open a discussion about what counts as an "organic" movement for environmental change. By reminding us of the role of the human voice and soul, and their silencing in a technological world, the lyrics keep this perspective alive.

Although very different in their epistemological stances, the focus on the need for alternative energies connects the hip hop and science texts (Table 4). Here again, hip hop helps humanize the discussion while simultaneously touting the same technologies, such as solar and wind power, that are mentioned in the textbooks. At the same time the focus of the textbooks on the tensions and global conflicts that erupt because of resource and energy management give a strong context for the severity of the energy issue. The textbooks help elicit a deconstruction of the frames of "energy independence" and "energy security" and the hip hop songs add relevance and soul to these overtly technological discussions.

Table 1.4 provides an outline of the full comparison of the themes found in the science textbooks and the hip hop songs as well as the common theme that both texts used.

Table 1.4. Summary of themes found in each topic for environmental science textbooks, hip hop songs and common themes.

	Summary of Themes		
Topic	**Environmental Science Textbooks**	**Hip Hop**	**Common Themes**
Global Climate Change	Addresses global regulatory policies and implications of greenhouse gases.	Connects Global Warming to race and class differences in who is bearing the burden of this issue. Also connects to broad capitalist problems such as pharmaceuticals.	Calls for reducing personal emissions through alternative consumption.
Water	Stresses the communal importance of water in international cases and raises the question of access to water as a human right.	Discusses water in the context of slavery, racism and history. Confronts bottled water and privatization of water.	Describes the finite and cyclical aspects of freshwater.
Food	Talks about foreign aid and poverty placing food in international perspective.	Describes domestic and urban food issues and the importance of teaching youth to grow food.	Frames food in terms of access and inequality not just production. Compares native (traditional) growth practices to
Species & Diversity	Recognizes different cultural perspectives (such as Native Americans) views on endangered species and their preservation.	Artists take the role of the endangered species to show parallels between how we marginalize species and groups of people.	Encourages an ethical stance on the value of species and diversity.
Energy & Technology	Emphasizes energy for national security and its role in international conflict such as controversies over terrorism and wars for oil.	Views the human voice and soul as alternative forms of energy. Questions the role of technology in taking over our lives and sense of identity.	Looks for alternatives to current energy issues.

Discussion

When examined as a whole, this content analysis showed that environmental science textbooks do incorporate themes of social justice and racial and cultural identity in their texts. We can say that much progress has been made since Sleeter and Grant's (1991) declaration that sciences have not improved much in this category. However, a closer look at how these themes were integrated on the topics here, such as food and water, showed a much lower degree of the use of these themes within the chapters devoted to each topic. In comparison, the hip hop tracks showed numerous ways of simultaneously covering the same topics as the textbooks and adding ideologies of social justice and identity. This is not to say that science texts are incapable of blending these themes on

a per-topic basis, indeed ES is likely at the high end of the spectrum within the other natural and physical sciences when comparing its level of usage of these sociopolitical themes. For the topics in question, it is clear that the creative verse can and should be a necessary trespass on a well-rounded science curriculum covering human's relationship to nature.

It is worth noting that hip hop attempts to cover topics such as global climate change, food and water, as a first step to showing its compatibility with environmental science teaching. The present analysis showed how the often international and policy focused tenor of environmental science education can be balanced by the domestic, urban and justice-conscious ideologies found in the songs surveyed here. As Mike Watts and others have done, it is important to still raise the questions of how poetry fits in science and this analysis shows direct ways this can be accomplished. All of the lyrics highlighted here are ones that I have used in my own classroom instruction to increase engagement and relevance of the more standards-based content we need to cover for general and AP environmental science. This includes not only urban high school classrooms but also at the liberal arts university where I teach.

The present study has focused on what we read and how we read it in an environmental science classroom. Although poetry is passionate and emotional, taking a step back to see what themes current poetic verses contain and mapping how they align with

existing science texts can be useful as we try to spread the practice of bringing more social justice themes into science education. The songs and lyrics can be accessed on the internet and I typically create a worksheet that has the lyrics with numbered lines and questions at the bottom that we work on in collaborative exercises. I begin these lessons not by telling the students what I see in the words but asking what they see, eventually covering the major points that connect to our science curriculum if they are not seen by themselves. We are diversifying reading practices when we listen to the music while we read the lyrics in front of us, challenging students to cultivate a deeper and more disciplined understanding of the music and artists they may otherwise take for granted.

The practice where a science educator incorporates poetry naturally extends to having students create their own verse to demonstrate their learning, to cultivate their own songs about nature, social justice, and identity. I have outlined elsewhere my efforts at having students compose their own eco-raps, but this process has caused me to reflect on how we develop the voice of our students in fields where they are historically underrepresented (Cermak, 2012). Adding poetry, social justice and identity to a science class introduces new ways of listening and speaking about critical disciplines such as ecology, and allowing this expression is a political act.

Environmental science has a diversity challenge, as APES achievement data shows, and this is a pressing concern for a number of reasons, including the fact that real world environmental problems disproportionately affect low-income communities of color. There is an underexplored connection between the condition of one's natural environment and the forms of art that erupt when conditions become unbearable. Hip Hop is one of these art forms that responds to overlapping conditions of environmental, economic and social degradation. By restoring this creative eco-discourse that is currently marginalized in science we are giving these songs new bullhorns, allowing their words to recolonize our classrooms. As the emcees in The Green Anthem stated, "speak your mind, that's wind power" and we can restore this wind to the classroom just as environmental science seeks to re-center the general scientific discourse on natural principles. Even more than forty years ago Dr. Seuss connected the power of the voice back to environmental conditions. He shows this when he describes how the Lorax confronts the capitalist Once-ler who has caused all the pollution.

"Once-ler!" he cried with a cruffulous croak.

"Once-ler!" You're making such smogulous smoke!

My poor Swomee-Swans…why they can't sing a note!

No one can sing who has smog in his throat.

Although the aim of the study is to contextualize the melding of poetry and science within the constructs of race and nature, the relevant themes in an apparently non-racial text such as the Lorax show that this discussion is not new or unique. The hip hop artists may help us see that the plight of the "Swomee-Swans" is just like the situation in which many urban youth of color are learning and living. When the Lorax and hip hop are used together in our courses about nature and science, we may find that there are many new ways to harmonize how different cultures sing about ecology. Science and hip hop can be brought together to create new melodies we have not yet even imagined.

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Chapter 2

The making of a hip hop ecologist: remixing race, nature and music in movements for urban sustainability

Introduction

The first thing I noticed about Carlos as he stretched out his hand to greet me was the microphone that was tattooed the length of his forearm. His bold tattoos stood out at the environmental sustainability meeting we were attending as did his dark complexion; he and I were the only people of color in the room. I learned later what he was doing as he presented his organization's work on converting polluted lots into urban green space and rallying to stop the development of a diesel power plant that was scheduled to be built right next to an elementary school in his Latino community. Carlos, only twenty at the time, was a youth organizer for a fair housing and environmental justice non-profit organization in Boston who led a team of teens in a youth empowerment program. He invited me to a different kind of environmental gathering in his community later that month where he was to show me the meaning behind his tattoo and his version of environmentalism.

When I arrived at the address I walked down a dimly lit hallway into a stripped-down, basement style room with a short stage filled with young people dancing and rapping along with Carlos, whose emcee name was Chapu. Chapu was rapping freestyle rhymes about the environment with an engaging power and flow. His lyrics were at once timeless and current; connecting broad themes such as industry, capitalism and environment into a locally-focused call to action to stop the Power Plant that was to be built in his community. The microphone emblazoned on his forearm stood for his very real talent of amplifying words for environmental activism and making them powerful and relevant for the young, mostly Latino crowd. A self-proclaimed member of the underground Latino hip hop movement, Chapu used his strong reputation as an outstanding lyricist to draw in young people from his community who might not otherwise have heard of concepts of environment intertwined with those of social justice. Over the next year he and I would collaborate on several projects, including the design and delivery of a series of community-centered and environmentally-themed hip hop concerts.

Carlos is one example of a small but potent set of youth who are taking their talents as hip hop artists and blending them with their work for environmental sustainability in urban settings. I dub this group the "hip hop ecologists." As an academic who examines themes of race, class and culture in environmental discourse, I had been thinking about the dearth of eco-messages, musical or otherwise, that were coming from communities

of color and finding their way into popular discourse or mainstream education (Cermak, 2012). For some time, environmental sociologists have had well-developed research on the more race-conscious, environmental justice (EJ) movement that is often juxtaposed with the "mainstream" version of environmentalism (Bryant & Mohai, 1992; Bullard & Chavis, 1999; Pellow & Brulle, 2005; Taylor, 2000). However, the scholarship on EJ has done less work to analyze the art coming from this movement. During my work in the field I began to ask questions about what forms of cultural texts were being produced and consumed by the young people of color who were working for urban sustainability. My first encounter with a young person like Carlos who was creating rap about the environment was a coincidence, but I soon found that a subset of the young people who were working with EJ organizations were also talented hip hop artists.

The hip hop ecologists represent an anomaly when compared to cultural stereotypes that define who cares about nature, what counts as an environmental text, and what counts as hip hop. In the popular realm, as one blogger from Treehugger.com has surmised, "In hip hop, we usually hear more about smoking trees than saving them."[4] This quip captures longstanding assumptions that environmental issues are somehow off limits to rappers who would rather talk about gangs, drugs and materialism. By meeting and working with several hip hop ecologists, I had the opportunity to hear their perspective on these assumptions and to learn about how this translated into the

[4] http://www.treehugger.com/culture/green-hip-hop-dr-octagons-trees.html

actions they were taking to promote sustainability. As youth who walked the boundaries of race, culture, creativity and environment, they were living counter-stereotypes and how they developed into their roles demanded more attention.

As the ideas of sustainability pervade the mainstream, there is some new scholarship devoted to the idea of counter-stereotypes in the context of race and nature. One example is Breeze Harper's book "Sistah Vegan: Black Female Vegans Speak on Food, Identity, Health, and Society"(2010). As Harper asks, "How do black woman vegans navigate through family and friends' perceptions of veganism as a "white thing" and in opposition to traditional black Soul Food identity?" It is this type of question I asked of the hip hop ecologists I interviewed for this study. What does it take for a young person growing up in a neighborhood covered in concrete to want to create music about nature? How do they perceive these intersecting stereotypes about race and nature that are enforced by family, friends and society and ultimately break through them? Whether the focus is a Sistah Vegan or a hip hop ecologist, it is time to confront these questions of identity, nature, and creativity as efforts for sustainability continue to evolve.

Cultural production at the crux of hip hop and sustainability

After learning more of the individual hip hop ecologists in the New England area, I found a broader synergy occurring in the US between movements for urban sustainability and

the grassroot hip hop movements. A search on the internet brings some clever connections such as the Organic Hip Hop conference, with their advertisement graphic replacing the "O" in the words "organic" and "hop" with a grapefruit and apple image. This conference touts a series of workshops with hip hop artists focusing on eating healthy and starting organic urban gardens. Their premise, as written in one description, is that "*Traditional environmentalism has had a difficult time breaking in to minority communities…likely because it's pretty white and middle-class on its face.*"[5]

Another group called Grind for the Green (G4G) departs from the standard environmental symbols of green leaves or pristine forests in its logo by featuring graffiti text, microphones and two massive subwoofers (speakers) with metal gears strewn next to them in the foreground. Founded in 2009 in Oakland, CA the group's first sentence of their mission sums up their perspective, "*G4G is committed to moving youth of color from the margins to the epicenter of the environmental movement.*" Their web page heralds a solar-powered hip hop concert with a healthy food area for kids, testimonies about going green from urban kids of color and statements from well-known hip hop artists like Talib Kwali, Dead Prez and Davey D. According to Van Jones, a renowned African American civil rights and environmental leader and founder of the non-profit Green for All,

[5] http://www.sundancechannel.com/sunfiltered/2009/11/organic-hip-hop-conference-hits-miami-this-weekend/

> **"Grind for the Green is one of the most innovative and creative youth components of the green wave rising in America and globally. G4G is giving the green movement's political agenda a cultural voice – and that voice is Hip Hop."** –Van Jones, Grind for the Green website[6]

The hip hop ecologists are the engine for this "cultural voice" and call into question why and how the existing voice of the environmental movement has not taken hold in urban communities of color. In contrast to movements built around consumption of eco-friendly goods, as cultural producers the hip hop ecologists expressed strong ideas of how the cultural and intellectual work done by the environmental movement could be changed.

Their active stance towards producing environmental messages in their music is reminiscent of Gramsci's organic intellectuals, those forms of scholars and cultural producers that arise from the masses in times of political suppression. Cultural analysts have begun to link hip hop groups like the Seattle-based "Blue Scholars," who see themselves as blue-collar versions of academics, with organic intellectual thought (Viola, 2006). In Gramsci's time, the concept of organic was derived from its root "organ," and denoted the vital role these intellectuals played in subverting cultural hegemonies that paralyzed the political will of the masses. Today, the environmental movement has adopted the organic term to guard how food is produced, steer changes in food

[6] http://www.grindforthegreen.com

consumption and production, and their impact on the Earth. As is evident in the mission statements of the green hip hop groups, there are aspects of the environmental movement that function as a cultural hegemony itself, necessitating more strategic initiatives to promote communities of color, and specifically youth of color, to the forefront of the movement. The hip hop ecologists are a form of organic intellectual who are broadening the notion of organic from its focus on food to questions of how environmental thought is produced.

The youth I spoke with for this study are youth of color who continually navigate the issues of race, culture and nature in the environmental movement as they forge their identity as activists. The interviews for this study afford a view of the trajectory of these artists as they moved into strong leadership and educational roles with their rhymes as their main tool. For many, the notion of organic was linked to both content and process of their lyrics. They would rap about organic food but find a way to keep the vital voice of their communities, the stories of racism and injustice, alive in their work. By doing this, their emotional, metaphoric and race-conscious music would become an important force to counteract the hegemonic tendencies of environmental texts that deal only with idyllic nature and leave overt references to identity off the page. The challenge of staying true to their roots while still incorporating the broader discourse about harmonizing with nature sets a standard for what it means to be an organic intellectual in a time of environmental crisis.

Asynchronous Rhythms: where does music fit with the racial tensions of the environmental movement?

The story of the hip hop ecologists emerges as a complex navigation of identity politics in a movement that is wrought with racial biases. Like the popular commentary, social researchers of environmental concern also evoke race-based lenses. For example one early, survey-based study of young people's environmental attitudes by Hershey and Hill (1977) asks, "*Is Pollution a White thing?*" finding that young White persons espoused stronger beliefs in the impending environmental crisis. More recent studies have mixed results, some reporting race-based differences in environmental concern while others report little (Johnson, Bowker, & Cordell, 2004; Mohai, 2003). These studies address the question of how race influences environmental belief but do less to address how these potential race-based differences manifest in tensions for movement practitioners or how the production of cultural texts such as music also structures these interactions.

One study that shows how identity politics can negatively affect the environmental movement is *Mission Impossible? Environmental Justice Activists' Collaborations with Professional Environmentalists and with Academics* (2005), by Cable et al. These social researchers used focus groups, face-to-face interviews, archival data and phone-interviews with thirty-five individuals to discern how EJ activists experienced collaborations with non-EJ environmentalists. Despite some positive and neutral interactions, a tone of resentment characterized many EJ activists' reflections on cross-

race and social class collaborations. Although representatives of both groups would attend the same functions, their interactions were infrequent and superficial. Some EJ activists suggested the discrepancy of social location between White-American and activists of color as a reason for negative collaborations. Condescension and power struggles were also a common complaint about the mainstream organizations. The Cable study is the research that best approximates my own experience as an environmental scientist, educator and activist working in the non-profit scene.

Research that looks specifically at non-dominant forms of environmental discourse is also rare. One key article by Barbara Lynch entitled, "*The garden and the sea: US Latino environmental discourses and mainstream environmentalism"* (1993) describes environmental discourses as drawing from "shared sets of imagined landscapes" that derive from specific historical circumstances. Her work contrasts the landscape of an un-peopled, pristine, wilderness which has relevance for mainstream Anglo-Americans with that of urban Latino populations who viewed urban gardens as the interactive locale of cultivation between humans and nature. While very few mainstream Americans spend more than a weekend per year in pristine wilderness and not all urban Latinos garden, Lynch found stable differences in how these relations to nature were conjured up during interview and narrative. This difference in how nature is treated and its relationship to culture are just a few of the many ways environmental discourses may differ (Mulhausler & Peace, 2006). Again, you're repeating nearly verbatim here with

the intro Lynch compared the Anglo and Latino American environmental discourses through interviews and by interpreting texts from Latino authors whose eco-social commentary via fictional literature helped her profile each discourse.

Lynch's study also departs from other research on discourse because she asked her participants to comment on texts from the oral tradition. Despite this reflection on cultural texts, poetry and music are somehow not included as viable sources for analysis or reflection in Lynch's study. The academy is turning to questions of nature and race; Kimberly Smith's book, "*African American Environmental Thought: Foundations*"(2007) is a clear example that traces a relationship to nature from slavery, to the Harlem renaissance to the present. However, while Smith heavily references the lost environmental sentiments of key minds such as WEB Dubois, Frederick Douglass, and Booker T Washington, there are scanty mentions of their poetic contemporaries such as Langston Hughes who wrote "The Negro Speaks of Rivers" in 1922. More recent work such as Camille Dungy's aptly titled *Black Nature* (2009), an anthology of 400 years of nature poems by people of color, is a start to chronicling the importance of the poetic voice in ecocentric thought.

Finally, there is the emergent scholarly work on hip hop's connection to the environment. Debra Rosenthal, in her paper *Hoods and the Woods: Rap Music as Environmental Literature* (2006) outlines the themes in the lyrics of several songs such

as Mos Def's New World Water (1999). Rosenthal draws from related literary analyses such as Melvin Dixon's "*Ride Out the Wilderness: Geography and Identity in Afro American Literature"* (1987), one of the few works that directly addresses environmental ideology in literature production and race. My own work also examines cases where I brought this "green hip hop" into urban classrooms to teach environmental science and asked students to compose their own eco-raps (Cermak, 2012). These studies suggest that music and lyrical production, particularly coming from marginalized populations, have the potential to be powerful forces in shifting environmental education studies. However, hip hop is not the only creative and rhyming verse that speaks out on the environment; folk songs such as Joni Mitchell's Big Yellow Taxi (1970), and even Dr. Seuss's The Lorax (1971) are overdue for more sociological perspectives on how and if they are serving their purpose of creating a stronger environmental ethic. The present study, by engaging the creators of these green hip hop narratives, can provide a critical look at how these texts were meant to be used.

The interviews with the hip hop ecologists provide the stories behind the production of green lyrics but their story also affords a look at the conditions where these aspiring artists and activists thrive and fail. Overall, I see this as a continuation of projects like Breeze Harper's on the Black woman Vegans, a line of critical sociology that seeks to understand those that interrupt and remix negative stereotypes. These musical organic

intellectuals who rap about organic food provoke multilayered questions about the social forces that structure conceptions of environment, art, and activism. The interviews also show the harder story of the hip hop ecologists that is not all happy reconciliations of identity and environmental organizing. As with other activists, there was a lot of frustration, burnout, changing of jobs and struggling for money. Like many other youth of color in the hip hop era, they have many stories of how they were discriminated against by the police at one time or another and several have histories of incarceration and ongoing legal battles. Nature, food, and music keep surfacing as recurring themes in the lives of those I have seen who are most able to come through these experiences, heal, and recover their balance. I am interested in how, amidst the barriers of racism, gray landscape, and squandered hopes, the voices of these young people rise as green as that tenacious plant that pushes through the asphalt.

Methods

To qualify as a hip hop ecologist, a person had to have experience working on at least one environmental campaign and also compose and perform rap or spoken word poetry. For many of the participants, their primary exposure to environmental ideologies came through their work in after-school and leadership development programs with environmental and environmental justice organizations. In some cases, the young artists entered their work with no concept of the environmental movement, often just looking for community-based jobs, but became impassioned activists through

working on environmental campaigns. This passion was then etched into their lyrics and the music produced by the hip hop ecologists is some of the primary examples of environmentally-themed "green" hip hop used in the analysis. Some of these tracks are known to the point where they can be found on music downloading sites such as "itunes" while others exist only in recordings from concerts. I only included music where the artist had directly given me consent to use their lyrics. This conservative set of qualifications limited the sample but made for a richer set of interviews rooted in experience in both music and environmental movement dynamics.

The hip hop ecologists ranged in age from 15 to 33 and were all from the New England region. This sample included 16 participants; 12 men and 4 women. Some of the participants requested pseudonyms while others did not. All of the participants were persons of color, Black or Latino with a mix of first generation and second generation immigrants. This sample was small but nearly exhaustive of hip hop ecologists in the greater Boston area as it is a small group. Most of the participants were colleagues or worked for organizations I was also working with or studied at high schools where I was teaching. Others were recruited by contacting them after a performance or open-mic. Like the broader hip hop movement, men are over-represented in this sample. A more gender-based analysis is warranted but the small number of the sample made such a comparison less robust. Although a smaller group numerically, the hip hop ecologists

were among the leaders of the youth-based movements for justice and sustainability and their contributions were tangible and powerful.

The one to two hour interviews were semi-structured and touched on the following themes summarized here with some examples of questions. 1) hip hop origins: how did you start composing and performing and what does hip hop mean to you? 2) hip hop and environment: how did you begin working in the environmental movement and what led to your first creation of green hip hop? 3) hip hop and education: How do you use your songs to spread knowledge and incite action in your community? 4) hip hop and identity: how does your art speak from your race or ethnicity and your urban environment? 5) Long-term goals and ideals: What is your ideal direction for the environmental movement to develop from here? These themes helped organize the participants' views not only as artists but also how they positioned themselves as intellectuals and activists within the larger environmental movement.

The interviews were all transcribed and coded with focus on how they reported their success as environmental artists and how they navigated the social dynamics of community organizing and activism. Based on their stories, the participants were loosely grouped by their degree of involvement in the environmental movement and in their production of hip hop. This grouping was done to allow comparison of which hip hop artists were able to turn their creative work into wage-earning, leadership-based

jobs for their respective social movement organizations. The degree to which they produced their music for broader distribution was also noted as a benchmark within the hip hop movement. Of the sixteen participants in this study, five met the stringent requirements of a "first-tier" hip hop ecologist which meant that they had at one point held a paid-leadership position with an environmental non-profit organization and had produced an album with at least one track that qualified as green hip hop. Five of the sixteen participants were grouped as a "second-tier" which meant that they had at least an internship position (paid or unpaid) with an environmental non-profit and had performed their work at local concerts. The "third-tier" was comprised of young people who had written at least one rap or poem that had strong environmental lyrics and had at one time volunteered on an environmental campaign or project. The list of participants and their tiers is given in table 2.1.

Table 2.1. List of hip hop ecologists with age, race/ethnicity and tier of relative achievement.

Name	Race/Ethnicity	Age at interview	Tier
Carlos Pemberthy	Latino	19	1
Tem Blessed	Black	33	1
Wil bullock	Black	24	1
Nicole Marina	Latina	18	1
Corey Depina	Black	21	1
Ella Brown	Black	18	2
Karl Smith	Black	15	2
Jose Barbosa	Latino	17	2
Bernard Harper	Black	17	2
Ben Gilbarg	Black	23	2
Juan Barros	Latino	17	3
David Thell	Black	18	3
Jackie Nesbitt	Black	19	3
Michael Gray	Latino	18	3
Liz Scott	Black	17	3
Devon White	Black	16	3

This tier-based comparison also allowed me to provide greater differentiation among the already exceptional group of the hip hop ecologists and to have some form of external validity regarding their talents in a social movement context.

Results

Although they varied by race, ethnicity and time spent in the US, the hip hop ecologists' identity was heavily structured by their lives as artists and the practice of their craft as lyricists. All espoused in-depth epistemologies about hip hop culture and its role in providing an outlet to deal with stresses in their lives. In general their feeling was that

the incorporation of environmental themes was not as novel as society (or I) was claiming; hip hop has always been a way to comment and cope with forces that impinge upon freedom and community life and global climate change was just one more of these forces. It was not until they entered a mostly White environmental movement that they became aware of how their art was consumed by others who had not been accustomed to hip hop as anything more than music or rap with an occasional political message. Simultaneously, as they began to develop an identity as hip hop artists who write about nature, they experienced pushback from within their friend and family circles based on racial and cultural assumptions.

Fueled by the internal and external perceptions of their work, the hip hop ecologists (HHEs) reported a new level of introspection on the potential of their art in what they saw as a movement in need of better ways to communicate its message. They responded to this by more strategically using their art as a way to educate and make a niche for themselves. Exhibiting traits of cultural navigators who can adapt to changing cultural settings (Carter, 2003), they were adept (though not always successful) at creating art that spoke to their community-based, hip hop crowd that valued cultural and racial authenticity and the broader and more White environmental movement who scrutinized the message. Many spoke about how they balanced the "positive stuff" with their other raps, some of which appear devoid of political content. This balancing act

was a hallmark of the hip hop ecologists who straddled worlds to create inspiring messages.

A portrait of the hip hop ecologists as organic intellectuals emerged from these interviews: they are activists from marginalized communities, with little legitimized form of education or credentials. They create messages that speak to both elite and marginalized groups. Like intellectuals, several of the artists here have taken the cultural texts they produce and used them to do their own educational and leadership training for youth in their community. The three-tier system I outlined helps show some differences in the extent to which these texts were produced. They work for and with more credentialed scholars and activists and this has given them a unique perspective on the intellectual workings of a movement.

The themes here provide more in depth examples of their stories. What emerges is a portrait of the HHEs that call into question how such unique talents are cultivated in the environmental movement and whose responsibility it is to foster opportunities to blend the art and activism. Although several of the HHEs developed careers in environmental-related fields, few were able to turn their intellectual production via hip hop into paid opportunities. Understanding the trajectory the HHEs experienced in the environmental movement can help better prepare practitioners to identify how to best support the powerful but under-tapped potential of these political artists.

1. Navigating prejudices from peers and family

Carlos was one of the top-tier hip hop ecologists who would work his way into an environmental justice non-profit and eventually become a youth leader who created albums with socially and environmentally conscious lyrics. He emigrated from Colombia when he was 12 years old,;he did not have proper documentation for his citizenship. Growing up in East Boston, a more than 70% Latino neighborhood, with low economic resources, he got involved with the local gangs, recalling the turf wars and drug dealing that were commonplace.

> *"I had bad experiences with cops, made some mistakes when I was young. Getting arrested or being harassed for no reason, get my car pulled over for no reason. Even though I know I'm not doing anything wrong I still get stressed. Now I'm not making mistakes but I'm in the wrong place at the wrong time." (CP)*

Similar to Carlos, other hip hop ecologists reported growing up in neighborhoods with gang-activity, but something pulled them to community work at the local non-profit. In Carlos' case he started to spend time at one program focused on music and arts for urban youth and then got word of a job in teen leadership at a fair housing organization

that had a focus on environmental justice. As he migrated to this world, he was questioned by his friends who had seen him in the gang life.

*"What are you doing? You're planting? That's like for gay people."(*CP)

Carlos offered this rendition of a "typical" peer who reacted to his initial work starting community gardens. In youth vernacular anything abnormal, seemingly frivolous and coded feminine gets labeled "gay" and garden work was a clear case of this. The pressure came not only from peers but also from within the hip hop circles of the artists. As Juan recounted, he would often hear *"why you wastin' your time with that tree hugger crap."(JB)* Thirteen of sixteen participants (81%) reported similar stereotyping and prejudice with regard to their work. He also reported other artists critiquing his lyrical production saying that socially and environmentally-conscious rap "*just doesn't sell*." For the urban, teenage peers of the HHEs, environmental work was not only uncouth but also incapable of generating income, a fatal move for an aspiring artist as they saw it.

Other HHEs found resistance based on deeper assumptions about race and connection to land and nature. Wil Bullock, an African American working in sustainable urban agriculture since he was a teenager is now in his twenties and an environmental

educator on a farm near Boston. He recalls what it was like bringing home stories of learning how to grow food and working in the fields.

> *"Okay, so I talked a lot about it with my friends and my family when I first started doing it…they thought I was absolutely crazy, I mean they didn't know too much about it, but I would hear things like "why you working on the farm? That's like slavery work, y'know we were free, we were freed from that."* (WB)

The notion that slavery can have a legacy on land relations is one that has been discussed at some length, for example in Kimberly Smith's *African American Environmental Thought: Foundations* (2007). Smith refers to Eldridge Cleaver's "land hang-up" that he claims for African Americans in a post-slavery era, one induced by the forced labor on the land. Wil experienced the legacy of this hang up first hand in his family's reaction to his work on the farms. It is significant that this sentiment against working the land is a raced relation, one embedded in ideas of what counts as legitimate occupation. One other example was from a young Latina named Nicole who discussed her own progression beyond having prejudices of her own.

> *"I remember thinking about the environmental stuff as so corny, and having a few friends who were learning about it in school and being like*

"that is so boring" or whatever, but then through my experience at xxxx I can see why it was like more important after a while." (NM)

The cultural stereotypes from peers and family varied from critiques of racial connections to the land to more general views of it as "boring" or "gay." The HHEs navigated these by delving more deeply into their environmental practices, rooting their beliefs in sentiments they learned in their environmental leadership and organizing work.

Although many reported such stereotypes, the top-tier groups reported developing ways to move through these stereotypes. Carlos went on to describe how he confronted being called gay for his agricultural work:

"They're like what the fuck are you doing? Planting flowers? and I just looked at them like c'mon man and I just look at them like what do you expect me to do? Be on the corner with you? Are you going to pay my bills? Are you going to keep me out of jail? Are you going to bail me out when I'm locked up? so there's challenges like that but in the end I don't pay much attention to it." (CP)

Sometimes navigating the prejudices meant ending relationships with friends. Carlos experienced legal trouble for gang related activity and reflected on his realization that his friends disappeared when it came time for actual confrontations with the law. Carlos would eventually again get in trouble with the law, after leaving the non-profit career to find money elsewhere, and his status as an undocumented immigrant had him up for deportation.

Wil Bullock, as he gained in experience and kept his job working the land said of the criticism he initially received:

> *‘“I don’t think it was a negative thing, people just didn’t understand it and it was totally foreign to them so, whatever people don’t understand they’re leery about, so it was nothing negative, it was more they just didn’t get it, but that changed. In the end it helped me actively change them, from the way my mother cooks, she uses more vegetables now, to connecting with my grandfather who is from the south, and he loves gardening.”(WB)*

The stereotypes around race and environment were real but through their work and commitment the HHEs found ways to open paths for communication between their non-profit world and their skeptical families. For others like Nicole, they reflected on

finding balance with their emerging voice as environmental authors, reconciling this with the multiple expectations from friends, family and work.

> *"yeah you know I guess it was about my way of talking about it [environmental issues]where before I was thinking of it as "their" way, whether they[sic] white, black or whatever. In my rhymes, it's my way and that makes it real to me." (NM)*

For the third-tier HHEs in particular, a more pragmatic approach to their environmental art showed through. Michael, a latino youth, remarked;

> *"I still do the environmental stuff but my more recent albums have um, what you might call harder rhymes, because my uncle gets me these small recording deals that pay more money."(MG)*

Across the tiers and range of identities, each of the young artists saw potential and power in drawing from environmental themes, yet the profitability of their craft also came in as a limiting factor in some cases. As the environmental ideas became more real to them, through their art and experience, yet another set of assumptions confronted them in how the mostly White environmental movement perceived them and their art.

2. "Being Heard" within the Whiteness of the Environmental movement.

As their prominence in the local non-profit scene increased they experienced tensions when they entered the majority White space in venues such as conferences, a first for many of them. This was pronounced in the top-tier HHEs who by their success got more attention from the public. Wil stated outright that one of his challenges was being misjudged and misunderstood for who he was:

> *"My success was also my biggest challenge. Being a black person in the inner city, you're viewed in certain ways, and I thought I had to fight a lot of stereotypes. There were definitely times when I didn't feel I was being heard the way I wanted, by someone else who, you know, might not have been a black inner-city kid," (WB)*

The concept of "being heard" ties into notions of race and place, and Wil described how his black and urban perspective initially positioned him apart from the rest of the movement. His "success" was his being placed front and center in the movement because of his strong mix of leadership, communication and artistic talents. Yet even as his message reached more ears, it did not always change how he felt received. Carlos shared a similar experience after going to an environmental conference:

"Yeah I feel like there's a lot of misrepresentation from a lot of groups, I just went to this conference in Worcester, it was your typical conference where there was a bunch of White people, middle aged, um, and I was the only Hispanic there, there was no Black people, people of color there, so definitely we are misrepresented in these places, we need more people who are working in the urban communities to be there because there's a lot of important ideas coming from diverse and low-income people." (CP)

This process of entering a White space weighed on them at first, but as they learned to live in both worlds they saw it not as a fault of their own but of the internal movement dynamics. In talking about the lack of diversity, one artist named Corey spoke of the White organizers he worked with as they tried to confront their own bias.

"And some of the organizers get it, they'll look at their lists and be like "what the fuck man we have like all white folks on this roster" and they do a good job to not just have the token, and to their credit, as far as those organizations go, they seek me out for events and they've had beyond just me there at the table, but I think that it needs to be more."(CD)

Thus, the HHEs were fully cognizant of their iconoclastic role in the environmental movement and in their attempts to live a life beyond what was expected. This type of response did not vary much across the tiers, but the top two-tiers of HHEs, being more exposed to conferences and places where they would encounter White, environmental professionals, had more clearly articulated critiques of the racial dynamics. For example, all but one (93%) of participants agreed that race was a factor in the reception of their message but only artists like Carlos, Corey and Wil had lengthy answers on the topic. Borrowing from popular parlance about race relations Corey recognized how bringing in "token" people of color are just a beginning for the movement to confront its own Whiteness. Engaged in a consistent dialogue about how they and their colleagues tried to navigate the Whiteness of the movement, they began to find that they represented more than just their own views but also their marginalized communities. Moving beyond simple head counts of people of color in the movement, Wil's idea of "being heard" in a way that represented them and a non-mainstream perspective became a fertile ground for how to confront these racial stereotypes through their art.

3. Finding an alternative frequency for environmental communication

The hip hop ecologists thought hard about how to represent themselves through their art but also saw hip hop as a way to address communication problems they saw the environmental movement harboring. The HHEs reported tiring rapidly of the standard mores of communication and education used by their allied non-profits, messages that

overemphasized the facts and rational perspectives. This is also where they began to identify how their rhyming talents could be of service. Ella, a female Caribbean American emcee (femcee) stated this clearly:

> *"It's important to try to reach people in different ways. If I was to go up there and talk about how important the environment was or how important the food system was for 45 minutes, like when I was in a high school within the first minute, they're tuning out. But if I start out with a song, it's like automatically, it piques the interest and that opens the door for that conversation."(EB)*

Carlos pointed to the overly authoritarian approach that many non-profits take in their messages,

> *"If I say DO this and DO that about stopping global warming it's just not that effective, we have some programs where we been doin' that for a minute* [a long time] *but when you bring art into it, it helps make the message and helps people remember."* (CP)

The emcees connected the power of rhyming as an alternative "frequency" or channel from the standard educational styles but also as an alternative to the commercialized

music that the mainstream hip hop industry was producing. Karl, a Haitian American rapper who worked in high schools stated:

> *"through music, through the power of spoken word it was a blessing, because a lot of them are listening to Little Wayne, or a lot of pop music and borderline house and techno, its changing and so there's a frequency that the emcees tap into and there's the importance of rhyme. It's like Dr. Seuss he came at you in rhyme, it's easier to put in information when you put it in a rhyme, even like "I before e except after c". An emcee puts this information in rhyme form and they get it in a positive way, instead of just being told what to do, like a lot of the hip pop[sic] music that mainstream stuff be telling you to buy expensive liquor and shit."(KS)*

In this quote Karl critiques the dynamics that push movements into a "telling what to do" mode of communication. Here he extends his comments on the monotone messaging to his own hip hop movement, parodying the forms of commercialized hip hop that have straightforward messages about buying lots of expensive things as "hip pop." Ironically, where environmentalists and progressives in general may critique hip hop for its content of materialism, the HHEs show that the form of this message, whether it's telling people to care about global warming or telling them to buy expensive liquor, is actually similar. Both the kids listening to hip pop and the academics

and activists calling to end global warming could use more creative communication as a way to break out of this form of messaging.

As they were learning and teaching the HHEs recognized that the some of the biggest learning steps had to be taken by those who considered themselves experts. 70%(7 of 10) of the top-two tiers of HHEs discussed not just the potential use of their lyrics for speaking to youth but also to the older professionals in the movement. This marked a clear example of how their role as artists developed a sense of organic intellectualism. Jose, a Cape Verdean American teen said:

> *"the other challenge is getting people who have been in this stuff for years, um doctors, environmentalists, academics, politicians, who have this lingo, this conversation and this language, to get them to understand that the way to get other people to understand is not by trying to show how smart you are, it's about simplifying your message so that everyone can understand what you're saying, so everyone can see why it's important." (JB)*

This expansion of message that they called for was tied to their conception of why hip hop was so powerful as Bernard put it:

"I'm not saying like goin' out and doing violence or flashing your money even though that's a part of hip hop, like having that cocky personality. Hip hop is something that embraces all cultures so if you do that, if you accept other cultures, that's a part of hip hop because everything, every other music genre is integrated, it's soul music it's rock music it's blues it's R&B all that, so if you're being a part of everything instead of just focusing on yourself, if you just open yourself up then that's hip hop. Just opening yourself up to everything else, opening your mind and then you're a part of hip hop whether you like it or not." (BH)

Like Bernard, hip hop ecologists attempt to carve out an authentic space where artists simultaneously speak from their genre of strength (in this case hip hop) but also recognize the power of the root of all art, the soul and the self. On the surface, this seems almost a contradiction, as artists who actively tout their hip hop music and movement but simultaneously say all music is one and that all people are one. When viewed not only as a genre but as a culture that emphasizes mixing and sampling, hip hop does seem better positioned to embrace other cultures. This unifying stance on music and language is also similar to the deep ethics of many environmentalists; that we are all a part of nature.

Although Wil Bullock acknowledged racial tensions he also kept in mind the elements that unify people:

> *"After all the differences we're still human beings, and there is something in the core of us that is very similar and you can try to reach that and get by all that other stuff that is really beside the point. And a lot of that for me it comes to music, that's how I can penetrate all that stuff and get to the core. It's through music, everyone can connect to that, I've been in places where I was singing songs and I don't know the language and I don't know anything but I was hitting people with the music in a way that they could get it and the language didn't matter."(WB)*

Again, language and music arise as components of the critique levied against traditional forms of spreading knowledge about the environment. Ella, a second-tier HHE who took her talented words beyond concerts and into school classrooms reflected on engaging her audience.

> *"It was hard to make that connection without sounding cheesy and I didn't want to sound like "ok you should love the farm, you should love vegetables," I wouldn't want to listen to that so how could I ask someone else too [laughter]. So the change happened when I realized it was a*

different thing, when I started to think about the community aspect, and food, which we can all relate to, that's what made it easier for me to write this stuff."(EB).

Through their attention to different frequencies of communication that tap into unifying trends that bring people together, the hip hop artists began to develop their environmental voices. Similar to their new identities as environmentalists, their words would be scrutinized by their peers as they strove to compose works that were not too corny or cheesy but still spoke with power about nature and environment.

4. Re-infusing humans into nature through lyric

The understanding the HHEs reported of the need for an alternative frequency of communication was followed by an increase in their own lyrical production that remixed themes they were hearing in their environmental movement experience. A look at some of the lyrics penned by the artists interviewed here shows themes they created a form of environmental discourse that overtly speaks from their identities, race, history and culture. What is discursively unique is the way the HHEs intertwine overt references to race and culture with contemporary environmental concerns. Even across the tiers of HHE experience and achievement, their lyrics showed similarities in themes and in the basic structure that connected social and environmental themes. The interviews afforded a more in-depth look at the reasoning and inspiration behind the

production of the lyrics. I begin with a look at the rhymes of two HHEs who came from different heritage but approached their topics in similar ways.

For Carlos, after learning about a power plant that was to be built in his community, he began scrawling lyrics on a napkin, urgently connecting his local, visceral case of environmental injustice to larger frameworks of capitalism and industrialization. One verse of the song "EJ all the Way" shows a complex blending of his Latino heritage with contemporary environmental justice discourse.

Cuentan mis antepasados de la cultura Quimbaya
cuando reinaban los indios con su arco flecha y lanzas,
en tribus con Caciques no existía la pobreza
cazadores en acción trayendo comida a la meza,
(el valor del oro al indio no le interesa)
una perfecta simbiosis con la madre naturaleza,
llegaron españoles saquearon nuestras riquezas
la avaricia la codicia reinaba en sus cabezas.
(Hoy en día es la misma lucha en diferentes escenarios
contra los corruptos y los súper empresarios que
no darían un peso por mi bella gente de barrio…[7]

[7] **TRANSLATION**

I have seen Carlos perform these lyrics with blazing speed, going back to his ancestors to show how this tension over natural resources and those in power has been replaying for the entire history of his people. His words position natural resources at the center of struggles for power amidst colonization and slavery. By dissolving the barriers between historical social justice discourse and a call for a "symbiosis with Mother Nature" he was able to add power to his critiques of the greedy powers that were replaying the same injustices on a different stage. Carlos linked the pre-exisitng symbiosis with nature to the contemporary struggle for sustainability.

I also asked the artists about their use of recurring metaphors and imagery such as Mother Nature (*la madre naturaleza*). David, for example, responded to learning about Hurricane Katrina in a workshop I taught about connecting global warming to local environmental injustices. He is an African American young man who was working with a non-profit organization that specialized in teaching environmental science for high school students. He was just starting his work with them at the time of the interview

---

My ancestors tell the story of the Quimbaya culture/When the natives reigned with bows and arrows and spears
In tribes with chiefs, poverty didn't exist/ Hunters brought food to the table
Gold did not interest the natives/ A perfect symbiosis with Mother Nature
Then the Spanish came and plundered our riches / The greed and lust ruled their mind
Today it's the same fight on a different stage/ Against the corrupt, and the big businessmen
That won't give a buck for my beautiful people in the ghetto

and fits in the third-tier of HHEs for this study. In his writing which he later turned into a track called “The Overdose” he used an extended mother metaphor.

I wonder why it be like this

Once a beautiful town

Hate to see it like this

Heard some beautiful sounds from all the birds chirping

So much pollution got our mother chest hurting

Man this ain’t working

They keep beating on momz

And they stay on drugs

Cuz they dropping them bombs

Now we patiently wait for her overdose

Man I feel she close

Hurricane Katrina tried to send a note

And them storms getting worse

So I pray hoping that mother Earth don’t feel the hurt

David and Carlos came from very different backgrounds, and during their interviews I asked them to trace their metaphorical reference to Mother Nature to different aspects of their personal history. For Carlos, he linked it back to bedtime stories from his father.

"yeah I guess I remember it coming from when my dad told me stories as a kid y'know, he just called it mother nature." (CP)

Separated from his father because of his immigration to the US, Carlos drew from his familial narrative that was in turn drawn from a larger reservoir of native Colombian connection to nature through folklore. This is consistent with Lynch (1993) who calls these figures and metaphors that comprise environmental worldview "shared imagined landscapes" that are conjured during exposition of nature in literary works and now here in hip hop composition. Carlos's Latino landscape is populated by historical tribes like the Quimbaya whereas David's African American narrative relies on Katrina and acute experiences with domestic violence.

David's use of "mother nature" differed, although it was also related to his family. His depiction of a battered Earth mother was connected to the reason why he had moved to Boston:

"So why did you decide to use mother in your lines 'they keep beatin on momz'?"

"Cuz you know in bad terms, in a bad relationship a mother is always getting abused on, you never really hear about fathers getting abused on, so I use the mother like you know how we throw stuff on the ground, it's like that y'know, basically that's what I was using. Y'know I had experience with that in my life, it was part of why my mom and I left Philly for Boston."(DT)

The candid and strong connection between domestic abuse in his life and his lyrics allowed him to map this relationship onto an Earth-mother figure, connecting the injustices that get done to both types of matriarchs. Although different in origin, both of these Mother Nature figures are linked to displacement and uprooting from one space to another. Many of the emcees reported using their lyrics as a way of venting about their situations and working through the social stresses in their life. By connecting their stories to the suffering of the Earth they opened more empathic channels between their social locations and the environment.

In other forms, the emcees became inspired by issues of sustainability and used them as a way to bridge to their own ideas of education and youth and racial empowerment. For his track, "I am the Bee," Tem Blessed showed how the colony collapse disorder he learned of at a conference was a conduit to his history and his people that enabled him to make a statement about race and environment.

"I wrote y'know "I am the Bee", actually speaking with a friend of mine and we're talking about the bee, and during that conference I remember learning about that and I took notes like a class, and I was like ah I can make a rhyme out of this. And he was like, "Yo that'd be ill to be a bee and go on out and pollinate and carry on whatever message" and so I got inspired by him and wrote "I am the bee" and so like making that connection with this little insect and saying how important they are just like black folks are important, just like Puerto Ricans are important, and like Irish folk are important, you know the whole ecosystem, it's all needed."(TB)

From this comment we can see how Tem and his friend's immediate thoughts on pollination were extended to include carrying on poetic and educational messages. They also connected it to their race and identity and showed the similarity of marginalized people to the "little insect" and how each had intrinsic and integral value to the ecosystem that was being overlooked and neglected. Connecting this marginalization back to all forms of people, and their right to be recognized helped situate the bee's plight in a larger matrix of social oppressions.

Ben Gilbarg, whose artist name is First Be, collaborated with artists Tem Blessed and Outspoken to write the "Green Anthem" after working with activists at a social and environmental justice conference. During a powerful speech from Van Jones at the Connecting for Change conference in 2007 he stated that the movement that speaks to race and nature questions not just "how we power our machines, but how we power our movements." Responding directly to this, the chorus of the Green Anthem reads:

Everybody shine, be solar powered

Speak your mind, that's wind power

Move your H_20, wave power

Organize, people power!

You got the soul power!

Here the human is infused into nature, the elements the mainstream uses to focus only on power, energy and efficiency get expanded and refocused on humans. Showing how closely tied they were to the movement, they sampled Van Jones' line on the value of the green economy, "in a green economy, it's not just what you spend, it's what you save," actually putting a sample of the recording of his speech into their song. Ultimately, the metaphors all come back to the soul, the power to the people and real community organizing that grassroots hip hop has always embraced. For the artists these were the forces of nature that would bring real environmental change.

Although ranging in topics, species used and in their own history, the common theme of the lyrics of the HHEs is that they directly extend ecological concepts to include humans. By making this connection explicit, they shift away from perpetuating the environmental concept as "abstract" or "exempt" from constraints and call for recognition that the same processes that destroy the Earth are those that we use to destroy each other. In a more positive sense, the strengths of nature are highlighted, helping move past a victim mentality for the Earth and focus on organic human relations as a way out of the current problems.

5. Concrete Walls: Defining the constraints for the making of a hip hop ecologist

Despite the fact that a set of young and talented emcees are writing more lyrics in defense of nature, their ability to navigate the complexities of racial dynamics in the environmental movement, lack of economic opportunity and stifling of authentic creative expression offers a less optimistic interpretation of their fate as a whole. The frequency with which HHEs are making it to leadership positions in the environmental movement while also honoring their art is low. To date, as far as I know, only one of the five top-tier HHEs, Tem Blessed, is still practicing a full integration of youth leadership and green hip hop production. Some of the themes and reasons behind this tapering off of the HHE talent arose in the interviews.

Devon, an African American emcee said it most plainly, alluding to his lack of desire to deal with navigating prejudices in the environmental movement.

> *"I just don't bother no more, they always be asking me to do these shows for free at their conferences but over here [referring to his neighborhood] I get studio time to produce some of my other rhymes about the street."(DW)*

Devon fits into the third-tier of HHE, having written some strong environmental lyrics and participated in some environmental justice campaigns, he was at one point inspired but could not sustain this particular artistic outlet. Another third-tier HHE named Liz, connected this back to her view of environmental lyrics as just another topic that was not a priority in the scheme of her potential career.

> *"Well, I did that one just for my group xxxx because they asked me to write it, I don't think I would've done it if they hadn't pushed me. I like singing about it, but when I only get a few songs on a stage if I'm lucky, I'm not about to use that one, not a lot of my friends would know what I was talking about." (LS)*

Liz alluded to the point that some of the lyrics and topics were productive only in environmental contexts and despite their relatively accessible environmental content, would still be too foreign to an uninitiated, underground hip hop crowd.

The second tier HHEs often were absorbed into the structures of upward mobility such as undergraduate institutions. Ella and Karl, for example, moved on to community college where they had no outlets for their budding environmental intellectualism. Jose eventually had to leave his organization when their grant terminated and was most recently working at a Best Buy to save money for school. When their environmental music is not supported enough to make it to album status, or built into educational initiatives, members of this tier dispersed into still being powerful youth but ultimately distanced from their once important and vital role in creating environmental and political art.

The first-tier HHEs, being more accomplished in selling albums with environmental tracks on them, nonetheless faced a different set of problems as they tried to make this their niche. Wil, for example, whose album about food justice was funded by a grant, found an environmental leadership job but had less of an outlet for his environmental music in that position. He still tours with his band but does not include the album which is from his solo career. Carlos, for a few years after creating his track, "EJ all the Way," nurtured this by creating educational concerts with it, but also developed his solo career

where he did not feature this track. It is clear that the HHEs, like their identities, had trouble selling their hybrid talents to a full hip hop or full environmental crowd. This is one of the many landscapes that successful HHEs were able to navigate, caught between movements that were not, on the surface, fully prepared to integrate.

Ultimately, general attrition and low funding of the non-profit world wore down some of the HHEs and they returned to the life from which they had used the environmental movement as an escape. Nicole, who was 18 years-old at the time of the interview, got pregnant and left her position at her non-profit to start her family. Carlos, one of the most successful HHEs, got in trouble with the law and after a legal battle eventually had to return to Colombia. His non-profit helped get the funding to sustain his court appearances and after winning he briefly returned to working with them. His girlfriend got pregnant and Carlos returned to Colombia to be with the other part of his family. The HHEs were not fully insulated from the real social and economic pressures facing urban youth and their low-funded status made the development of their talents even less likely.

Tem Blessed also faced legal troubles when he was involved in a racially motivated altercation with police where he was wrongfully accused of a crime. Like Carlos, he was aided by his non-profit comrades in court and eventually his charges were overturned. Having been wrongfully attacked by police simply for being “a black man with dreads”

he used this direct encounter with racism to fuel many of his politically charged lyrics and his will to continue spreading words of justice to his community. Tem remains one of the few cases of an artist who still creates environmental justice songs and his comments reflect a deep root in nature that helped him get through the most challenging of times.

The outline of the constraints for the hip hop ecologists is key to understanding the depth of the obstacles faced by these young people. Like many persecuted political artists before them, their work allows their voice to stand independent of their life. Once produced and recorded, their music can be played for others to hear and learn from although it is uncertain the extent and depth to which their music is used outside their community circles. The dearth of those who actually make it to becoming full professionals without having to lose their creative environmental outlet points to a lack of support for this type of creativity in the movement as a whole. Understanding how to validate environmental messages across the hip hop and environmental movements is a key step.

6. The Source: finding the organic human rhythm

"The Source" is an important reference in marginalized cultures that use this idea to point to the anchor of economic, environmental and cultural activity that once made a people great. Recognizing hip hop as a form of environmental discourse goes beyond

pointing out the mentions of nature in the lyrics. The hip hop artists act as conveyors from history to the present, unearthing the environmental content of past thinkers and personalities in their cultural heritage and remixing them into engaging rhythms and rhymes; this was their organic source. Like Kimberly Smith's analysis of African American environmental thought, much of the works of past figures such as WEB Dubois have content that can be seen as environmental, it is the mainstream intellectuals who have not fully recognized these works. This silencing of the environmental thought of marginalized cultures leaves a gap in environmental discourse that the HHEs saw and began to fill with the thoughts from their own cultures. Where the organic and local foods movement pushes for more attention to the source of produce, the HHEs went back to the source of their culture's sociopolitical thought to show that environmental ideologies have always been present. In turn, this helped them identify environmental practices that had been dormant in their cultural heritage but were rekindled with their new attention via environmental non-profit work.

The source relates to the origin of where the artists get their political ideas that appeared in their work. The first-tier HHEs showed this conception and connection to the source. Tem discussed his perspective as a Cape Verdean, stating how his education about environmental and social politics came through his family:

"And that was the language in my family and they always had that and always told us about Amilcar Cabral who was our historical leader and real revolutionary and intellectual, military theorist that was on some whole other level, he was y'know an agronomist which was really about touching the soil and really about culture and wrote so many papers about the weapons of culture and things of that nature and always had like a very clear idea of why he was fighting" (TB)

Tem cites Amilcar Cabral, a man whose actions and writings helped free Cape Verde from Portuguese occupation. Cabral appears in many anthologies of African social theory such as Rabaka's *Africana Critical Theory: Reconstructing the Black Radical Tradition, from WEB Dubois and CLR James to Frantz Fanon and Amilcar Cabral* (2010). Like other thinkers in the radical tradition, Cabral is still mostly appreciated for his social thought, less so for his environmental insight. Rabaka cites one of Cabral's rich lines that describes how culture:

"plunges its roots into the physical reality of the environmental humus in which it develops, and it reflects the organic nature of society," (p.42). A contemporary read of this definition of culture with an environmental lens shows that this deep orientation to nature is evident in Cabral's revolutionary thought. Tem helped recover this by pointing out that Cabral was indeed an agronomist, that he worked with the Earth, and that his powerful thinking was rooted in environmental metaphors.

One of Cabral's core theses was the notion of "returning to the source" as a reference to the need for occupied cultures to get back on the path of cultural power and heritage that they had been on prior to colonization. These thoughts have mostly been interpreted for cultural significance despite the rich environmental themes. "The source" had as much relevance to land and natural heritage as it did to the social realm.

Carlos also made reference to historical events in Latin America, citing Simon Bolivar as inspiration for his politicized lyrics and reminding me that he had not learned of this in school.

> *"Simon Bolivar, he freed Colombia from the Spanish conquistadors, he wasn't even from Colombia but he had the guts to go around and say we want to be our own country, our own nation, we can take care of ourselves, and got other countries away from Spanish control. I respect that, and that was ideas I brought from my home country, we don't learn about that in my high school." (CP)*

Referencing Bolivar was Carlos's own way of honoring his source, bringing in the well-known anti-colonial stance but centering the conversation on natural resources as he did in his track EJ All the Way.

More generally, 13 of 16 HHEs spoke of the way in which adding the environmental perspective helped them explore their roots and identity. Liz stated,

"*My poetry has always been about me, who I am and what I see. Adding the environmental stuff helps me make this bigger than just me and tell people about how not all these problems is caused by violence."*(LS).

Karl said this more plainly, *"it helps me get back to my roots, you know, people were rapping before hip hop came around they just didn't call it that, it's all the same expression."*(KS).

The emcees had a strong timeless perspective on the source of their art, showing that the environmental content helped them recast the organic and historical themes in their words.

In their textual practice of returning to the source, the HHEs also recognized the environmental power their own cultures already had. Many of the HHES reported some condescension as they arrived in the environmental movement when they were told of how much more their communities should be doing to "help the environment." Jose said this plainly when he felt the irony of the mostly White environmental movement

pretending that urban agriculture was something new and that they had to "teach" inner-city communities of color how to garden.

> *"and speak to that point and say that like man this is our culture, always, like Cape Verdeans have always had gardens, Portuguese folks had gardens, Latino folks have gardens, this is what they've done for generations and so it's not new to us and we need to be included." (JB)*

This comment was similar to that from Wil Bullock, who bypassed race-based tensions of working the land to connect with his grandfather from the South who had been gardening his whole life. Jackie, an African American femcee and third tier HHE, who had worked with urban gardening with her non-profit organization, made a similar observation:

> *"Yeah I came back to my house to set up this raised bed and it was no problem because my mom was able to help me out, my grandma was able to help us out, they were good gardeners back in their time but had never had the time or the space to grow vegetables. Now we have two raised beds."(JN)*

The dormant growing cultures in the elder generations of urban communities of color were reawakened and reinvigorated by the initiatives of the non-profit organizations. To Jackie, the sustainable gardening practice felt new, but her own heritage reminded her that these environmental practices had been there all along.

This orientation to history and the source came from a deep understanding of their own creative voice. Tem pulled this full circle, reminding us that the truly organic instruments are just that, elements of nature turned into pieces to help us spread our music and our message:

> *"y'know when you go into nature you just melt into it you become the background and really reconnect then you're touching into the essence of life and Dead Prez say "it's bigger than hip hop" that's what they mean, and so y'know when I say it's more than music it's a movement, and so it's coexistent but it's a movement and the fact that in New Bedford we're next to the ocean and a lot of what we're feeling , and Cape Verde is an Island and in Guineau Bissau, the resources are deep, so I don't know how to explain it, it's the same. Y'know I feel it, you see it, and to see people having the ingenuity to be like I'm going to take this hide and make a drum or make a guitar with this wood and feel a vibration, whether it's in heavy metal or rock, it all has the same source, whether it's Christian-*

based, Muslim-based, Buddhism-based, it all goes back to that source" (TB)

Tem connects his intertwining of musical inspiration and nature with a renowned quote from the socially-conscious rap duo Dead Prez, who point out that "It's Bigger Than Hip Hop." The trends toward sustainability and justice are all connected to the original source that Amilcar Cabral mentioned and Tem explained how musicians can sift through the over technological and see that all rhythm and music comes from nature. They do not just write about nature but become a force of nature when they blend their art, their activism, and their cultural heritage.

7. Organic Teachers: how the hip hop ecologists turn their words to action

The interviews showed clear ways in which the HHEs used their art to enact change in community and educational settings. Several of their songs were made specifically for certain campaigns about stopping power plants or promoting healthy eating. All of their actions could qualify as organic intellectual activity, where they took it upon themselves to reframe environmental education in settings that ranged from public concerts to high school curriculum. The actions I summarize here were participated in most by the first-tier HHEs who had albums and fully produced art to contribute and often had leadership and planning roles for the events. Only two of the sixteen HHEs were not involved in any actions related to these described.

One example of HHE related events was the several forms of concerts that were spawned to raise awareness about environmental justice issues. Often the emcees invited speakers or local politicians and press to hear their music and see the youth in the crowd. Carlos took this the furthest and won a grant from the city to host six concerts per year all themed around environmental justice. As part of these concerts there were environmental justice song-writing competitions where local youth were allowed to submit their work and perform it in front of the audience for prizes. Partnering with other green and community-based non-profits many efforts were made to keep these concerts "off the grid" with solar powered speakers, bicycle powered sound, and healthy, organic and fair trade refreshments. Very similar to other grassroots hip hop shows these concerts were used to simultaneously educate and entertain.

Other HHEs took a more active and strategic role for spreading their message, again partnering with local non-profits who had networks with high school and middle school teachers. The artists would work with classes that ranged from the humanities to the sciences, coming into classes and performing and giving workshops related to their content. Often these classes were linked with actions taken at the school to promote sustainability, such as creating a garden, or installing solar panels. The topical and relevant nature of the lyrics, such as global warming or healthy food, made ideal

complements to more in depth readings and activities done by the students. Tem, for example, liked to perform some of his rhymes *a capella*, then get into a discussion with the youth about how and why he wrote these lyrics, answering questions, and provoking further debate. These school-based activities turned into good publicity platforms for the artists' public concerts.

Lastly, as the HHEs aged out of their non-profit youth programs some returned to similar work as youth mentors. Tem worked with a non-profit called Youth Build that had traditionally been known for helping urban youth develop construction trade-skills as they build affordable housing. Bringing in his environmental justice background, Tem helped start a program within Youth Build that helped do energy audits and weatherization of homes, employing Black and Latino youth in this emerging urban green field. Carlos, in addition to starring in the EJ concert series, garnered the funds to employ a team of six youth to help him deliver the concerts and learn how to organize and hold community events. Wil went on to work with a non-profit that helps urban youth get exposure to nature and spend time outdoors and learning the basics of urban agriculture. Ella, focused on developing her team of youth to give seminars on environmental justice to other youth groups. Similar to their classroom activities, the HHEs used their music in trainings for the new youth leaders, performing for them and conducting discussions about the relevance of their music and, in some cases, inspiring the youth to begin composing their own environmentally-themed hip hop.

The aforementioned G4G group is perhaps the strongest embodiment of the deliberate blending of hip hop and sustainable movements. As more of these HHE related initiatives emerge, we are a likely to see more groups that focus on recasting the green message with a hip hop style. It is, at the moment, difficult to measure how a combination of a strong connection to creative voice and political leadership development helps prepare the youth for sustained work in a difficult but imperative field. Many of the HHEs developed less from intentional programs and more from their desire to channel their skills into the movements they came to love. These newly produced knowledge workers continue to actively challenge the standard way of developing leaders to confront problems of ecological sustainability, focusing not just on cultivating a stronger relationship to nature but also to their own forms of expressing their message.

What was universal was the feeling that the dual cultivation of their inner nature and their art saved them from a bleak alternative. "*If I wasn't here I don't where I'd be*," said Juan,

> *"We need to develop more programs and opportunities because not everybody has the opportunity that I have, we need more funding, that*

will help the kids stop working at McDonalds or Shaws, or you just working, we need something that will develop the skills." (JB)

The green job opportunities provide salvation from a pollution-based economy and from the problems produced by a condition distanced from nature. Speaking from experience, Tem wrote about how he now sees his music as a reminder of the nature that is missing:

"I need to create the music that hopefully makes you want to go back, and to be like here it is, at the spiritual level a lot of this we know, but to have that reminder, when was the last time you went to the woods? I was able to do this through Youth Build and you see how people change, and you see how these kids think they thugs or they want to be thugs, or they are thugs, whatever once you put them on a trail and stuff they're like big kids they're running they're skipping, y'know that's the power of nature to kind of take that concrete, cuz we're living in that concrete jungle there's that separation through concrete and tar that doesn't allow us to touch earth with our feet, putting on shoes so we don't have that direct contact as often as we should as we need to and that makes people hard, that makes people beyond who they are, far away from who they are, because I still believe in goodness."(TB)

Like other grassroot hip hop artists, the role of mentoring was at the crux of their skills and craft and the HHEs tied this back to nature. Ella, who stayed with the non-profit she was working with to mentor a team of teens, recalls the time when she had her youth on the stage running an event for the first time.

> *"Yeah just seeing them up there, dealing with their nerves, becoming leaders, that's nature to me, that's them learning to express themselves. And I do see it as part of hip hop, y'know, becoming aware of your own voice and how to use it."(EB)*

The journey of the hip hop ecologist comes full circle as they strive to recreate the path that led them to their own fusion of creativity, politics, and environment. By combining strategies to get youth to feel the Earth again with their bare feet and to feel their music connecting to nature, they begin an organically rooted step towards reclaiming their land and their communities.

Conclusion

The story of the hip hop ecologists offers a close look at how music, identity, and education are being used to actively reshape how environmental thought develops in urban settings. Cognizant of their role in the movement, the emcees also

recommended that greater funding and programming be dedicated to cultivating the creative voice as a form of environmental education. This involves moving past views of the HHEs as solely about art or music, to seeing their craft as intellectual work, organic scholarship that requires more attention to fully balance the historical racial problems of the green movement. Too many of the participants in this study eventually had to leave non-profit work to seek more income to provide for themselves and their families. Many well-meaning practitioners have started to enlist the HHEs at shows or benefits but offer very little compensation for the artists, treating them as a garnish or a perk instead of treating them as they would a "legitimized" environmental scholar.

It is now clearer that the conditions where environmental non-profits are serving youth of color give rise to some hip hop ecologists but it is less clear how these unique talents will be sustained. Their recorded work will be a longstanding testament to their talent and counter-stereotyped perspective but will their lives and careers be similar? Although the HHEs seem ready to remix their perspective into the movement, the movement educational and development programs have not yet found ways to remix their own standard. Future actions will determine if the HHEs are a fleeting and endangered species, or if they will be an integral part of a cultural shift to urban ecological sustainability.

The deep connection between cultivating the inner creative voice and communing with nature suggests that this type of educational work is a crucial complement to bringing inner city-youth into the woods. When nature is seen only in its idyllic form as externalized forests and pristine lakes, this basic connection of "poor urban youth of color" to "green environment" is often viewed as the main remedy to the lack of diversity in the movement. The HHEs show that it is the inner-nature, that source and that core, which needs the strongest attention. In the true tradition of organic intellectuals they remind us that those who need this inner cultivation are not just the "disadvantaged" youth but also the scientists, academics and activists already working in the movement. Van Jones, the activist who predicts the powerful role of hip hop in remixing the environmental voice, also reminds us of the final axis of sociopolitical change: not just top-down policy or bottom-up organizing, but inside-out movement as we learn to tell stronger stories of how humans are a part of nature. Moving beyond organic habitats and organic food, when the organic relationship is recast as a dynamic between our voice and our source as humans, we may begin a stronger path to a truly diverse and healing movement.

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Chapter 3

Hip Hop Ecology: De-gentrifying orality in the urban environmental classroom

Introduction

It was the first time I was reciting poetry for my high school environmental science class and I was nervous. As the son of two academics who never seriously stressed the creative arts for me or my siblings, I often wonder how I ended up in this position; first of all in front of an urban high school class, and second of all about to recite poetry in a *science* class. I had come to the urban public high schools as an environmental scientist, fresh off a Masters degree in ecology studying coastal ecosystems in New England, and I found myself spending more time in front of a classroom full of less than enthused Black and Latino students than in front of a computer producing models and graphs of how humans are destroying the coastlines. Move forward about two years and I was here about to get poetic for my students. The poetry was meant to cap off a three-week long curriculum where we had learned about ecology using environmentally-themed (green) hip hop and soul music and cases of environmental injustices. I was planning to use this poetic piece to challenge my current students to write some of their own lyrics to show what they had learned and I felt it would be more powerful if I delivered the words

aloud rather than just letting them read the words off the page or playing an mp3. In fact, the words of the verse I was about to recite, from a rap called “Pollution,” were written by a former student of mine.

The reason I begin with an ethnographic account of reciting poetry in a science class is to illustrate the myriad forms of language about nature that can at once be heralded, silenced, discussed, or performed in a classroom. Orality, the practice of doing and refining narrative, is central to discussions of the role of creative verse in education and for this case I was looking specifically at music and poetry about nature. These environmental discourses are intimately linked with racialized discourses that operate in the social spaces of both teachers and students. My notion of a “hip hop ecology,” is one way I link and attempt to blend what may seem an odd pair of poetic discourse in the hood with a refined and logical science of nature. This ethnography began as a straightforward study of what happens when one imports music into a high school classroom, but the sociological forces at play when a science-trained teacher recites the words of an African American teen who was writing green hip hop only because this teacher played similar music for him have channeled my analysis into a different direction. The story of how I came to embrace hip hop is as much a personal journey as it is an ethnography of the vital interplay between race, culture, environment and education.

The present study most resembles the work of teacher-researchers who use hip hop music in urban classrooms to gain critical insight on how language operates as an empowering and disempowering force. Marc Lamont Hill's book, "*Beats Rhymes and Classroom Life: Hip hop pedagogy and the politics of identity*,"(2009) provides an extensive account of his work with high school students where they took an academic lens to hip hop songs and hip hop history. H. Samy Alim, a sociolinguist, created a class called, "*Hiphopography: The ethnography of hip hop culture and communication"* that he taught in a high school in Philadelphia, having his students do linguistic ethnographies of their own speech communities (Alim, 2004). Inspired by these studies that were accomplishing teaching and research simultaneously, I turned my academic work to my ongoing teaching projects where I was intertwining music and environmental science pedagogy.

There are notable parallels between the linguistic and spatial environments of urban areas that are represented in urban classrooms. Alim labels a "gentrification of speech" that he describes as follows:

> **"Just as economic institutions are gentrifying and removing Black communities around the nation and offering unfulfilled promises of economic independence, one can also say that educational institutions have been attempting (since integration) to gentrify and remove Black**

Language from its speakers with similarly unfulfilled promises of economic mobility." (Alim, 2004, p. 233)

Alim's work, though not explicitly environmental, shows the importance of keeping diverse speech communities alive in the classroom. As a form of domination, gentrification works to not only suppress diverse cultural expression but also teach the suppressed that the dominant culture is somehow superior. For Alim, the gentrifying force was "standard" or "mainstream" English, but in the environmental context I saw the language and themes of Western science at the root of the exclusion of marginalized forms of linguistic expression like hip hop. Much of the scientific environmental discourse focused on places that were alien to my urban students, such as forests and mountains, and the textbooks provided rigid definition of words, such as pollution without allowing much space for deconstruction. The texts were effectively severing the source of their speech patterns, their immediate environment, and allowing limited alternatives to describe problems they saw in the world.

By incorporating green hip hop into the environmental science class I wanted to see if this gentrification could be curbed. In this ethnography I report several ways students showed me how they were ready to de-gentrify the classroom and the dominant environmental discourse with their own words about nature, but it was not until I decolonized my own science-trained linguistic repertoire that the cycle of hip hop

ecology was complete. Therefore, de-gentrification in the context of environmental thought is not an end goal, but a process where I remixed my own words and voice as much as I re-tooled the curriculum I handed to my students; it is an idea that requires that educators break through boundaries of discourse and rhythm wherever they persisted. We would all need to rethink our conceptions of space, nature, science and ultimately what qualifies as teaching and learning.

Hip Hop, Soul and Science

Bringing poetic verse into a science classroom is what Mike Watts, researcher of science education, calls a "creative trespass"(Watts, 2000). Western science has an artistic and linguistic facet of its own, but sociologists of environmental knowledge have pointed out that the rational form has come to dominate the politicized discourse about nature in the US. For example, John Hannigan, in the chapter "*Science, scientists and environmental problems*" (2008) states, "It is rare indeed to find an environmental problem that does not have its origins in a body of scientific research. Acid rain, loss of biodiversity, global warming, ozone depletion, desertification and dioxin poisoning are all examples of problems which first began with a set of scientific observations,"(Hannigan, 2008, p. 94). Hannigan points out how evidence for the climate crisis is largely based on graphs and models generated on Western reductionist epistemologies. As a "hard" science-trained academic versed in statistics and computer models of nature I was sent into the urban classrooms with this scientific environmental

discourse as my main tool; I was to quickly learn that this field was due for its own creative trespass. My colleagues, students and even my own range of orality would be some of the most staunch defenders of the established boundaries of teaching, language and environment.

It was not hip hop but the Soul music of Marvin Gaye that constituted my first trespass of music into the science classroom. When I began using music as a pedagogical tool I had little concept of hip hop as a music or as a culture but I knew I liked Marvin Gaye and had just realized, after years of listening to it, that the song "Mercy, Mercy Me" covered topics of ecology. In fact, a closer look at the 1971 *What's Going On* album shows that the alternate title for this song is "The Ecology." In one verse he sings, "mercy, mercy me/ oh things ain't what they used to be/ Oil wasted on the ocean and upon our seas/ fish full of mercury." At the time I had been teaching ecology lessons about how the metal mercury had neurotoxic effects on humans and there was a historical 1970s case in Minimata, Japan where a corporation had dumped mercury into a bay. The mercury had moved up the food web into the fish and poisoned the low-income fishing village that was downstream, resulting in deaths and debilitating diseases. In my initial attempts to bring cases of environmental justice into my class I had used the Minamata disaster as a way to show how science was used to inform a story where injustice was stopped. This written case was a good start but still remained within the purview of traditional education where ideas are communicated through the

docile rhythms of texts and worksheets. Introducing the overt and classic rhythms of Marvin Gaye in a science class would be a trespass but so too would the tone of his voice, his linguistic mores and the history behind the album itself. Introducing the Soul music would be a test of how much trespass my urban students of color would tolerate and interpret.

I decided to play the song at the end of the lesson about mercury and its effects on humans. I printed the lyrics of the song on a worksheet, numbered the lines, and played Mercy, Mercy, Me with some speakers attached to my laptop computer. I did not set up the song, I just told them we would be listening to some music and that they should listen for relevant terms. After the song was over I asked a simple question:

"How many of you have heard this song before?" Almost all hands went up.

Then I followed this with another question: "How many of you knew Marvin Gaye was singing about the environment?" all hands went down.

The following dialogue between me (M) and a student (S) ensued:

M: "So, what kind of music is this?"

S: "This is my parents music, it's like R&B I think?"

M: Oh man now you're making me feel old [laughter], this was more than just R&B…[no answer] it's Soul music. Any of you know other songs Marvin Gaye sings?

S: Let's Get It On! [laughter]

Although I have since taught this lesson in classrooms and workshops dozens of times, I am always surprised how stereotypical this response is. I am surprised first of all at how little the African American youth knew of the music that derives from their heritage, and I am frustrated by how most people remember Marvin Gaye only for his sexualized songs such as "Let's Get it On" or "Sexual Healing." What I did observe optimistically was that when they heard the tune, in some vestige of their cultural practices they *felt* the music, students would often break into seated-dancing and swaying as the music played on, their bodies knew the music, they had it in their family, they just had not intellectualized it before. They began to trespass the very small rigid seats to which they were confined. This connection to history through music, identity, and nature was a key element I was seeking to re-forge by bringing in Marvin Gaye.

Eventually my class would connect this to the mercury theme we were learning. Even though it was written in 1971, Gaye's call-to awareness of "oil wasted on the oceans" was eerily prescient of the 2010 Deepwater Horizon BP oil disaster to name one example. Just by observing the interesting conversations we had over the music I could

tell the tunes afforded us, as a class, a new channel of communication about nature. To help keep track of this I asked them to reflect on the most interesting things they had learned when we completed each unit. One young woman wrote on her page, "*The most interesting thing I learned was that Marvin Gaye actually wrote a song about ecology. He was singing about mercury in fish and the pollution and everything*." I was glad I had started to bring Soul music into my science classroom, it was interrupting the rhythms of our normal classes in how we moved, how we spoke, and in the engaging discussions that ensued. The Soul music also represented a line of inquiry that would lead me to hip hop music.

My musical repertoire was expanded when a co-teacher of mine, who knew I was interested in music about the environment, played the hip hop song New World Water for me.

New World Water make the tide rise high,

Come inland and make your house go "Bye"

Fools done upset the Old Man River,

Made him carry slave ships and fed him dead nigga

Mos Def's words would forever change my perspective on the water cycle. His reference to how murdered slaves could be a form of pollution, literally trespassed my

own structures of understanding of nature and environment. I was accustomed to ideas like environmental injustice, where many studies focus on how low-income communities of color may live closer to polluted rivers or have their waterways dumped in disproportionately by White-owned corporations. Mos Def took it this further and intertwined history, slavery, race, and water. He goes on to deliver several messages that call the listener to conserve water, and other more activist stances such as "There are places where TB is common as TV/cause foreign-based companies go and get greedy/the type of cats who pollute the whole shoreline/have it purified then sell it for a dollar twenty-five." I understood how contemporary corporate abuse jeopardizes natural resources, but what could slavery have to do with nature? At the time I was just beginning to configure my own sense of history, where I came from and how it related to the type of environmental message I was constructing.

One of the few works that has addressed the connection of hip hop to environmental thought is Debra Rosenthal's *Hoods and the Woods: Rap Music as Environmental Literature* (2006). Rosenthal cites Melvin Dixon's study *Ride Out the Wilderness* (1987) on themes of nature in the African American Literary tradition. Dixon writes:

> "*Afro-American writers, often considered homeless, alienated from mainstream culture, and segregated in negative environments, have used language to create alternative landscapes where black culture and*

identity can flourish apart from any marginal, prescribed 'place' " (Dixon, 1987, p. 2)

Citing Mos def and other hip hop tracks that use environmental themes, Rosenthal used Dixon's insight to point out how hip hop, like others such as Alice Walker, and Zora Neal Hurston, continually uses its voice to explore and in some cases reclaim "negative environments." I have always appreciated these commentaries that point out the themes of nature in Afrocentric thought, yet I also questioned what these "alternative landscapes" entailed and if they were confined to literary, non-musical spaces. Returning to Alim's gentrification of speech in urban classrooms, I began to localize the landscape to the classroom, realizing that by using science texts alone, I was limiting the linguistic palette from which my students could create their own alternative landscapes. Green hip hop and soul music helped me extend my concept of landscape from spatial to cultural, where the rhythms could help me de-gentrify this space.

The missing question, which I of course put off until after my curriculum intervention, was what my own language looked like. It was relatively simple for me to see that afro and eco-centric hip hop could help me connect to my high school students, but was it helping me connect to my own spatial and cultural landscapes? I was decolonizing and de-gentrifying my classroom with the musical texts, but still did not question how I was "feeding" them language and not complicating my own linguistic, occupational or

identity profile. I remained comfortably on my pedagogical haunches, clicking my computer button to create the music, creating worksheets and activities on my computer, using this music as a tool instead of hearing what it was calling me to do. The creative trespass was initiated with Mos Def and Marvin Gaye, but would not come full circle until I broke out of the way I was teaching and how I used my voice. This is what hip hop ecology means for an ecologist.

The Classroom Landscape

The span of this ethnography lasts from 2006 to 2010. I had been working with an environmental non-profit that taught environmental science in urban public schools and formed a strong teacher network from this collaboration. I began as a curriculum consultant, adding relevant cases of environmental justice to the ecology lessons and teaching these units in the classrooms of collaborating teachers. During this first year I began adding Marvin Gaye to the curriculum as I described above and ultimately Mos Def and other hip hop artists. After adding Mos Def's song New World Water (1999) to my curriculum the result was a three week-long unit that intertwined environmental science, environmental justice, hip hop and soul music. Over the course of the next three years I taught this eight times at different schools. I would identify teachers in my network who were starting their lessons on ecology, either as part of environmental science classes or as part of the ecology section of the broader Biology class. After sharing and modeling how I saw this unit was best taught I would co-teach it and be in

the classroom for the duration of the curriculum, observing and acting as a classroom management aid. During this time I would also do shorter workshops with classes and organizations around the city on hip hop and environmental justice. I included the observations of these workshops in this study as they all cohere around the idea of playing green hip hop and Soul for urban youth of color and observing their reactions and the stories they told in response.

Over the course of the study there were two themes that arose that are connected to how the urban youth of color received and reconfigured the environmental discourse I was presenting. The first was how slavery and racism kept surfacing as a theme that was associated with nature and natural resources. The second was how students incorporated their own frame of street violence into environmental narratives. In some of the classes I asked students to write their own lyrics as assignments for this unit. Many of the themes in their creative verse additionally illustrate the points I make about hip hop ecology and are included in the following sections. These structuring aspects of hip hop ecology would also inform how and why I decided to move past my mp3s and worksheets and learn to recite poetry in the classroom.

Hip hop ecology begins with seeing landscapes as not just external, far-off places but recognizing that every social setting is a landscape, both cultural and natural. The classroom, as Alim noted, is a landscape that is a microcosm of the relationship between

marginalized and privileged people and their languages. I wanted to de-gentrify the linguistic practices in the classroom but also the way we discussed and conceived of nature and space. This was the alternative landscape where we wanted to flourish. To fully embody the critique that hip hop has of mainstream environmental discourse we would have to put more of ourselves, our identities, into the classroom landscape. We eventually transformed ourselves into the landscape of the classroom, where our minds, bodies and souls, and the organic voice that connects them, became the soil to cultivate.

1. Recycling Slavery

"Why listen —the early hip-hop DJs asked—to an entire commercial disc if the disc contained only twenty(or two) seconds of worthwhile sound? Why not work that sound by having two copies of the same disc on separate turntables, moving the sound on the two tables in DJorhestrated patterns, creating thereby a worthwhile sound?...

The techniques of rap were not simply ones of selective extension and modification. They also include massive archiving. Black sounds (African drums, bebop melodies, James Brown shouts, jazz improvs, Ellington riffs, blues innuendoes, doo-wop croons, reggae words, calypso rhythms) were gathered into a reservoir of threads that DJs wove into intriguing tapestries of anxiety and influence. The word that comes to mind is *hybrid."*

- ***Houston A. Baker – Hybridity, the Rap Race, and Pedagogy for the 1990s***

  (Baker, 1991, p. 220)

Hip hop be the elements of

Unfinished business

Recycled to complete the legacy

Of creative expression that began

Way before the charting of time

I can't help but be the X factor

Earth, Fire, Water, Air

The elements I don't just do

But AM!

-Rha Goddess, The Elements, 2000

As Houston Baker pointed out, one of the discursive innovations of hip hop music was the use of two records juxtaposed, playing side-by-side, instead of just one. The skill of early DJs was how to mix or hybridize these rhythms, a simultaneous critique and reconstitution of the sound. In a coincidence of terminology with the environmental movement, the process where past rhythms are taken and reintroduced into contemporary ones is sometimes referred to as "recycling." Rha Goddess a femcee who writes about deep connections between hip hop and nature, discusses how recycling is a way to visit "unfinished business" that began "way before the charting of time." This stance towards history is one she mobilizes to become a force of nature, like hip hop itself. Like Houston's "intriguing tapestries of anxiety and influence" a true hip hop pedagogy tries to fully incorporate history so that the legacy can be completed (or at least revised). I was to learn how limited my own pedagogy was when a student of mine presented his own unfinished business in my classroom.

“So you mean you want us to go back into the fields?

Damien’s furrowed brow and challenging eyes stared back at me from the front desk in the room as he popped his question, without raising his hand. I had just completed a lesson on urban gardening (called sustainable urban agriculture) where I had outlined the typical argument for why localizing agriculture was important; inner-city areas have some of the least access to healthy, organic foods, some of the highest concentrations of diet-related diseases, low access to clean, green space, all matched with high rates of unemployment. The elegance of the urban agriculture programs from an environmental perspective were, to me, quite apparent. It is hard to disagree with the logic of supporting programs that clean up urban lots for use as farmland, employ local youth, provide leadership training, grow fresh foods, and distribute them fairly. But for Damien, the logic of this sustainable effort was the last thing he was feeling.

Damien was a 16 year-old African American student in my high-school Environmental Science elective course. His hesitation to embrace an idea that placed youth of color like himself, “back into the fields,” working the land, did not come from any rigorous line of thought about the legacy of slavery or the role of nature in urban revival. To him there was just something that felt wrong about more young Black people working in the fields. It was this anxiety-ridden statement of race and nature that showed me the unfinished business my lessons were not addressing. In retrospect, I view it as my

blindspot to hip hop culture, a lack of embracing ways young persons of color perceive race and cultural politics. My eco-pedagogy had only one record spinning, the one of my logical scientific training; I would need to learn to weave this with the thread of critical perspectives on race, slavery, and creativity.

As a sociologist, I noted Damien's words as the murmurs of a typically silenced voice that connects race and environment. Kimberly Smith, author of *African American Environmental Thought: Foundations* (2007) has provided one of the more comprehensive examinations of how and why African Americans, from the slavery era until the present, have an extensive but as yet largely unearthed line of eco-discourse. Much of the scholarship and commentary on race and nature highlights reasons why there would be a barrier, or what Eldridge Cleaver called a "land hang-up," that keeps African Americans from embracing the land and nature. To the contrary, Smith's historical analysis illustrates the many ways slave cultures kept deep connections to nature, and kept these ties alive through their folk and oral tradition. I perceived Damien's refutation of my logical approach as a challenge to think deeper about how this potentially rich reservoir of environmental knowledge might be accessed. As I was learning, I would need to rethink how I was presenting my ideas of why we should care about the environment in order to connect with my students.

The truth was that Damien, like so many of his peers, was a classic case of promising but unmet potential. Too often he would walk right into class, headphones on, plop into his seat and bury his head in his arms, fast on his way to a nap. His tests and assignments were always late and half-hearted, and despite all the efforts my co-teacher and I would take, pulling him up to sit up straight, spending time after school, disciplining him when he was disruptive, he never did more than just enough to get by. This young man represented the hundreds who we urban educators lose every year in our public school systems. These are the youth who are nice enough, personable and bright, the ones who are zombie like in class, but animated and active with their friends, the ones who show-up and pass their classes, the ones who have the literacy levels of a White suburban youth four years younger (Thernstrom & Thernstrom, 2003). These are the young people who, by and large, are the ones who graduate from urban public high schools and though they are not lost in that they get a degree, their mind loses by going unchallenged, unengaged, and disempowered. When I gave my lesson on sustainable urban agriculture, I didn't even think Damien was listening, but his statement showed me how much his mind and his soul were ready to speak. He was interested enough to speak up, unprompted, and both his action and the content of his statement, one that brought up slavery in an environmental science class, presented to me a rhythm to which I was initially unable to synchronize with my "well-trained" environmental discourse. Damien himself may have only had one record spinning, but if we were to succeed, we would need to learn to hybridize our music.

This is where Marvin Gaye and more recent environmental hip hop music re-entered the conversation. Soul singers and hip hop emcees were strong examples of African American artists who spoke about the environment and did not dismiss or omit the importance of racial injustice. They had the potential to speak to youth like Damien and address his apprehension about race and the land. I already mentioned Mos Def's song about water that hints at how our nation's natural resources, similar to our society, can be marred and polluted by the legacy of slavery. In a more straightforward example, Styles P, guest rapping on The Roots song *Rising Down* (2008) writes, "It's hard to claim the land when my great, great, grands were shipped to it." These voices re-iterate sociological analyses on race and nature but in a more relevant, accessible and musical style.

At the time, I remember fumbling for an answer, responding to Damien's comment with an enthusiastic "we need to see how this is helping urban communities." In the end, however, I see how this still stifled the potential of a much deeper conversation about race and its connection to nature. It was only through reflection, and re-listening to Damien's biting comment in my head, that I recognized the opportunity being presented. Adding these songs to my turntable was an initial step in creating a hip hop ecology.

Consequently, I began playing New World Water and Rising Down for my classes, intertwined with our lessons on ecology for the day. The connection was not difficult, when we were learning about polluted rivers I would play new World Water after the lesson and we would discuss which lines stood out to the students. Rising Down is a multi-faceted commentary on global warming as they write "With all the greenhouse gases/and earth spinnin off its axis/got mother nature doin backflips/the natural disasters/it's like 80 degrees in Alaska/you in trouble if you not an Onassis." In this song itself they intertwine references to slavery (via Styles P) and mother nature. To some degree they were using the scientific terms I was familiar with, terms like greenhouse gases, showing that they already had their turntables splicing eco-science into the hip hop discourse about urban and racial oppressions. I would have to mix these even harder to meet the rigid standards of ecological science teaching.

Sometimes my co-teachers would cringe with the "nigga" and expletives that Mos Def presented with his analysis of the water cycle. When he raps, "And it's about to get real wild in the half, you be buyin' Evian just to take a fucking bath," the students would respond with resonant laughter. One teacher, in front of the class, chastised me for the irresponsibility of playing songs with swears in them to her class. I began to see the power promoted by the music when one of the students retorted, "Shh, miss, we're being real here," as we continued our conversation about the identity politics of the environmental movement. Many of the students were accustomed to understanding

the way linguistic codes operate in social spaces, it was the teachers who had missed this lesson. These linguistic tensions that arose between science-trained teachers and the students were one way I observed the difficulties of bringing in a discussion of race and identity into the environmental classroom. I was realizing that without tangible results, my methods would continually be called into question.

To help substantiate the power of what music allowed in the classroom landscape I thought I should ask the students to write more openly about the themes of injustice they would learn in class and what they thought of the green hip hop they were hearing. This progression from consumption and dissection of media to its production was a core value of hip hop culture I had always respected. I wanted to see how adept my students were at recycling, taking their knowledge and blending it with their own view of history and the development of their culture. I thought of Damien, who I had lost and not had the chance to follow through with, and how I wanted to remix my own methods to better address the unfinished business of slavery. I had taken away his outlet and attempts to integrate the logical and rational rhythms of science with his budding historical perspective on race, nature and land. Tapping even deeper into the tenets of the oral tradition I could see that I was refining my call and now it was time to hear the response.

The assignment I designed was basic at first, write a poem or rap that encompasses your response to environmental injustice that must include some of the science concepts we had covered. I wanted my students to add their own track to the environmental discourse we were developing in the course content. One of the first pieces I received was from a young woman named Candace and it has stayed with me as an example of the potential of hip hop composition in the environmental classroom.

I watch and stare as the toxins fall down

The matter recycled from everyone in town

The poor to consume the dirt and the dust

Mercury and Lead Poison from the metals that rust

The ocean's contaminated and the water we drink,

Will damage the minds of the ones who must think

The selfishness of the rich

To intoxicate our fish

Is indeed profitable but death isn't our wish

Environmental injustice should be stopped

Cuz the feelin' of me dyin' leaves my mind distraught

This point of view is from me the minority

Striving for environmental equality!

I connect Candace's last lines to Damien's story. Where his identity caused my environmental song to fall on blocked ears, she was able to reclaim her own identity as a woman of color and proclaim a call to stop the environmental injustices she had both lived and learned about. She weaved in themes of science as well, her discussion of the mercury and lead metals and the idea that matter never disappears (the Law of Conservation of Matter) was her ecological concepts for this piece. I could trace how the music we listened to in class helped inspire her words and I could also see how she had learned and retained the concepts from my own scientific rhythms. This text of hip hop ecology was to be the first of many more composed in my classes.

The hip hop record that I was missing on my turntables was the one that spoke truth to the themes of race and history. The good hip hop emcees I know use their lyrics and recycling or sampling to access the past to keep the present discourse true to its roots. In Tupac's song *Keep Ya Head Up* (1993), for example, he recycles Marvin Gaye by directly citing his power and bringing it back to the younger listeners to make statements about urban ghettoization.

"I remember Marvin Gaye used to sing to me/

He had me feelin' like Black was the thing to be/

And suddenly the ghetto didn't seem so tough/

and though we had it rough/

we always had enough."

As part of my presentations on what hip hop has to do with environment I play Tupac's song to show how hip hop does not exist in a vacuum of art and that, like academic discourse, contemporary artists cite the predecessors whom they respect. Creative words and the oral tradition were a conduit to the past and I needed to keep this channel open. When I only talked about the rational and scientific perspective of agriculture I had unwittingly blocked this for Damien, I had silenced a major avenue of discourse that could have been melded with a positive expression of identity. Candace's words showed me that when I made space for this voice, a much stronger connection to the course material and the environment could be initiated.

A young man named Bernard connected for me the power of recycling themes of race and slavery with combatting gentrifying forces in the classroom. He wrote at the end of his piece,

now the rents going up/

this gentrified hood got homes being redeveloped/

now we outta luck, nowhere to go/

but I can make a change you see I got a crazy flow

Bernard made a connection between gentrifying the hood and his desire to make change by speaking out. His flow, a reference to his rhyming skills, showed how much value he placed in his ability to speak up about these issues. The paragraph that accompanied his verse connected the streams of the oral tradition and showed me that he expanded beyond an insular view of hip hop.

> **"Marvin Gaye's song on Ecology really inspired me when I was writing my project. He was telling what was going on with this country during his time. I did the same thing, but came at the people in a different way. We're living in a different time so I feel the situation's we're going through are more serious than back in the day. It's the same thing but a different stage. Back then they really didn't have to worry about them problems. Now we do and I feel somebody needs to do something."**
>
> **- Bernard**

Bernard's allusion to Marvin Gaye as inspiring voice and connecting it to his rap was an acknowledgement of the restorative power that many youth see in their creativity. Thus the first part of hip hop ecology was confronting race and remixing it into a positive discourse about nature. I like to think of it as the hip hop style of turntables where now we can view the new record as one playing the contemporary beats of ecology and the old one, sampled in, as the ongoing oral tradition that keeps alive

questions of race and identity. My observations were synced with Kimberly Smith's, that the oral tradition harbors ways to move beyond a slavery tarnished connection to the land and natural resources. By allowing this in the classroom I was unclogging the connection between history and the present. My students showed me they were more than ready to echo their voices down this new pathway we had carved together. Or as Bernard put it in his succinct but powerful statement, "I was ready for this yesterday."

2. Broken Glass and Peopled Pollution

Broken Glass everywhere

People pissing on the stairs, you know they just don't care

I can't take the smell, I can't take the noise

Got no money to move out, I guess I got no choice

- Grandmaster Flash and the Furious Five, The Message (1982)

One of the earlier hip hop tracks that is viewed as a political commentary is Grandmaster Flash and the Furious Five's *The Message (1982)*. As Debra Rosenthal has noted in her paper *Hoods and the Wood: Rap Music as Environmental Literature*(2006), although more recent hip hop songs are dealing strongly with environmental themes

such as global warming, even very early songs contain comments about physical conditions in the ghetto and their relationship to socioeconomic status. Here the overt pollutants are broken glass and human urine, pollutants that are different from the more scientific ones I was used to studying such as the heavy metal lead, acid rain, and smoke from cars.

Even before I began thinking critically about hip hop and music I recall a case in my first forays into the classroom that is connected to the themes in The Message. This came to me when I put the following at the top of a worksheet I designed for my students.

"1. What types of pollution do you see in your environment?_____.
2. How does it affect the people nearby: _____."

The worksheet was an attempt to get students connecting the class material about pollution to their community and I anticipated that the students would fill in the blank with the numerous forms of garbage I knew to be near the school and in the vacant lots that riddled the neighborhood; old tires, rusted car parts, refrigerators, shopping carts, plastic bags, litter and so on.

I was surprised as I read the one-word answer that Carla, a young Latina, wrote in the first blank:

"BULLETS."

She was clearly missing the point of the assignment, but I read on to the second prompt anyhow:

"*Bullets are a form of matter that is a common form of pollution in my area, the more bullets the more people that are dying*."

My dismissal of Carla's words stalled as I reflected back to how I had defined pollution for them in class as "*Contamination of the environment by waste from human activity. A pollutant is matter that causes the pollution*." I balked as I thought that even with my carefully worded definition she was not wrong, indeed she even used the scientific word "matter" to make her answer better. I had worded my own definition of pollution to simplify more academic definitions such as the…"undesirable state of the natural environment being contaminated with harmful substances as a consequence of human activities"(www.thefreedictionary.com). Most definitions of pollution are framed as harm done to a "natural" environment by humans. The more I unpacked the loaded terms that comprise the standard definition of pollution the more I could see how

narrow and confining this definition was, resting on unexamined assumptions of what counts as natural and what counts as harm.

Even by my own definition Carla was correct: bullets are harmful to human health, they are a form of matter, and their abundance is closely related to their potency. What struck me was that she had brought her own perspective, one where she sees many problems with violence, into the environmental schema that I presented. I realized how true her words were, and that by routinely distilling pollutants down to the periodic elements like lead (Pb), mercury (Hg) or arsenic (As) I, and other scientists, knowingly or unknowingly, strip them of a deeply social and political story. Even though I focused on toxins that were relevant to the urban areas where this form of poisoning is abundant and disproportionately high in youth of color, I had divested myself of other questions like how a pollutant can be more than the measurement of its parts. The irony of my short-sightedness came full circle when I surmised that bullets really are often made of lead. Whether lead comes in your paint, your pipes, or in a bullet form, elements can kill you in different ways and the vector matters.

Carla's answer helped recast my rigid notions of what counts as environmental and her story some of the hip hop I infused into my lessons. Specifically, her comment helped me see the relevance of using the track Respiration (1998) by Black Star. Respiration is a clear example of how hip hop artists turn the concrete, metal, and violence ridden

urban environment into a living, breathing entity. Wrought with metaphors and allusions to the concrete jungle the song begins with the Spanish lines, “escuchela, la ciudad respirando” (listen to her, the city is breathing). The emcees portray a complex connection to their urban habitat where waterfalls are replaced by fire hydrants, and the only avian creatures are the “ghetto bird” helicopters used by the police to keep an eye on the poor. This more vivid and relevant piece helped breathe life into the apolitical and abstract examples of lakes, mountains and rivers and woodland food webs in our ecology textbook.

As I mentioned in the preceding section, I gave my students the option of creating poems or raps about the material we were learning with the requirements that they incorporate the keywords from class (such as pollution) and that they include an environmental justice theme. One piece in particular by a young man named Austin has stayed with me as it echoes Carla’s earlier story about the role of street violence in urban environmental discourse:

I wake-up in the morning and see the abandoned buildings,

With the crackheads and fiends trynna pursue all the children

I realize in the back of my mind none of this is an illusion

Young kids getting asthma from the dirty pollution

Gun smoke leaving little babies with brain confusion

It's funny to hear about it, but it's not amusing

Hopes and dreams of kids playing on green grass,

back to reality they all stepping on broken glass...

-Austin, 17 African American

The line "gun Smoke leaving little babies with brain confusion" is a meaningful expansion of ideas of pollution into the realm of street violence. We had not covered any topics about street or gang violence or guns yet the theme was again imbued into the environmental conversation of our class. We had spent some time looking at Asthma rates in the city and their connection to air pollution but Austin helped me revise my standardized model of cars, trucks and incinerators spewing black smoke into the urban air. Indeed, guns also have a byproduct that conforms to my definition of pollution.

With further analysis I also connected Austin's last line about broken glass to Grandmaster Flash's form of pollution he mentioned back in 1982. I was to learn later that Austin was an aspiring lyricist and steeped in hip hop culture. I never had the chance to directly ask him if he connected his use of broken glass to The Message lyrics. His piece, which he titled simply "Pollution" would be the first one I would perform for another class.

Barbara Lynch in her paper "*The garden and the sea: US Latino environmental discourses and mainstream environmentalism*"(1993) found stable ways people of different racial heritage conjure their conceptions of nature, what she termed "shared imagined landscapes." By interviewing urban Latino communities and comparing them to White Americans for their perspective on nature she found that the way people described their ideal landscape differed. White Americans think of pristine forests, clear lakes and mountains, an "unpeopled" landscape. In contrast, Latino American's often brought up a peopled land, communities working with the soil, growing crops, and so forth. What I was seeing in my work was a similar process only for describing the pollutants. The imagery and observations drawn on by the youth were "peopled" pollutants, more intimately linked with violent human activities such as breaking glass or firing a gun. This was at first foreign to my "unpeopled" view of pollution that, although human-derived, was the byproduct of aggregated activities and industries run by corporations I did not really know. Even when I had taken an extra step and focused on how pollutants move in our bodies I had used cases where the pollutants were a byproduct of industrial processes, not interpersonal violence.

A final piece by Elizabeth shows how the hip hop style allowed my students to continually reconfigure what it means to pollute:

Is pollution a solution?
Or is it just a build up
Of more than paper and trash?
Because what matters is that matter
doesn't disappear,
It goes away, but where?
To a place where they struggle
to earn just a few dollars a day
While killing themselves
Where's the justice?
Toxins like lead and mercury
Creep into their bodies,
like a thief in the night.
Big corporations 'bout to earn money
No matter if they wrong or White.
Too weak to fight, the poor die
While getting poorer
The rich ignore the horror,
Continuing with business as usual.
What's going to happen?
When they take all they can take,
And the cycle of matter is one you can't break.
-Elizabeth, 16 African American

I saw a connection between her powerful lines "big corporations 'bout to earn money, No matter if they wrong or White," and when mos def says in his track new world water " Cause foreign based companies go and get greedy, the type of cats who pollute the whole shoreline, have it purified then sell it for a dollar twenty-five." Like Candace before her, she had chosen to show her perspective on the Law of Conservation of Matter. We had also learned about the biological pathways lead and mercury take in

the body but her imagery of them moving into a body "like a thief in the night," again conjured interpersonal violence and attached it to the more standard pollutants.

Elizabeth reminded me that pollution is "*more than paper and trash*." and her perspective was similar to how Candace, Carla, Austin and Damien questioned and reconfigured standard environmental discourse. Teaching environmental science in the hood has taught me about the inconsistencies and assumptions we can commit when we do not examine the sociolinguistic underpinnings of environmental discourse and pedagogy. In response, I helped create a classroom with a more balanced curriculum that made space to talk about what race and slavery might have to do with the environment. I also peopled my own worldview of environment to include the elements of street violence, recognizing how they are not separate issues. My students showed me the practice of a hip hop ecology, a race and justice focused version of mainstream ecological issues put forth in poetic verse. However, a full hip hop ecology challenges educators to not just put these eco-musical narratives back in the classroom and even extends beyond making space for students to write their own; the final element required that I find my own poetic voice.

Degentrifying the Teacher's Voice

When scholars and teachers who focus on urban educational inequality speak about gentrifying speech or language tensions in the classroom the transaction can be oversimplified to tweaking the teaching materials and allowing the students to write in different forms of speech to honor their speech community. After taking these measures in my environmental classes I still realized that I could follow this critique further and embody a hip hop ecology by trying on my own form of hip hop. In his article *The 1963 Hip-Hop Machine: Hip Hop Pedagogy as Composition*, Jeff Rice writes "I begin with an analogy: teaching research-based argumentation and critique in composition studies is like learning how to perform hip hop music." (Rice, 2003, p. 453). Rice was commenting on how he tries to break out of the confines of teaching composition and using the more fluid style of hip hop, like the recycling mentioned earlier, to liberate his pedagogy. I took this quote more literally and told myself that if I was going to require my students to mix together eco-science and hip hop lyricism and have them learn more "research-based" styles that I would have to do the same, only in reverse. Sure, my teaching materials that I created were examples of hip hop ecology composition, but I wanted to get to the source, my own voice, and try on a new way of teaching.

After several rounds of this curriculum I eventually used not just the words of Marvin Gaye or Mos Def, but also included the works of prior students as creative fodder for new classes. With their words, Candace, Elizabeth, and Austin, among others, were helping me teach environmental science. Moving beyond lyrics on the page I began fully memorizing their words and performing them spoken word-style for a new class of students. I kept second guessing my strategy, over-thinking the sociological tensions that would be at play as I, a suburban teacher of color, would be trying to deliver Austin's words in a manner that would give them legitimacy. The rehearsal was what helped. I practiced over and over, in front of the mirror, aloud as I walked between buildings at my school. I was so unaccustomed to practicing oral performance particularly when stripped of my handy Powerpoints to back me up. I was surprised by how foreign this basic practice of orality was to me.

I ended up performing Austin's rap called "Pollution" at Austin's school, two years after my lessons with Austin and two-years since he had graduated. I will never forget what happened after I performed Austin's piece, and then told the class that it was Austin who penned it. Not surprisingly, the first comments were not raves about the quality of my performance.

"That was Austin's?" one young woman remarked, *"that was amazing, what is he doing rapping about the environment?"*

Other students agreed, they knew Austin as an aspiring and talented rapper from their community and had, in their minds, separated their authentic language from anything having to do with the environment. By sharing this truly local example it helped them see the relevance and power of speaking out about their home and the relationship between identity and space. It also completed the learning loop and helped me embody the ethos of a hip hop ecology, where I use my own creative voice as a bullhorn for freshly cultivated environmental messages.

The discussion that ensued was more about Austin and what I had done than the content of the lyrics. The new students were more impressed that I had gotten him to write anything for class as, like Damien whom I mentioned earlier, he was known for not engaging in school. I had never had this kind of discussion before, I was so used to putting forth my arguments and having them taken at face value by my undergraduate classes I was teaching. There is a difference between talking about a topic and talking about what you have experienced. It is these stories that helped me transform the classroom from a landscape of passive reception to one of active production of messages, and this new crop of students jumped at the chance to share their creative words when it came time. This type of pedagogy where we talk more about ourselves, our environment and our connections to each other was one way to de-gentrify our speech.

I notice tangible differences in the classroom culture when I put myself and my organic voice out there, when I share my voice in an artistic rather than authoritative manner. Even when I knew I still had much more to progress, after all I only memorized Austin's words and did not create my own, I could tell that this sparked a different vibe in the classroom. It was as close as I had come to intertwining my organic voice with my political and pedagogical material. Many educators who have acting skills reflect on the difference between reciting lines that are written for you and lines that are about your own story. Austin's words were part of my story because I was the one who had incited him to write them. I was honoring these words by recycling them in this new classroom setting and the rewards of even deeper student creativity were exponential.

Conclusion

As much as hip hop ecology is about counting mentions of nature in lyrics and highlighting songs that make more use of natural themes, it is more about a journey into an oral tradition, one that has helped me find my own voice. As a pedagogy, hip hop ecology demands that we follow the same path as our students, if they are asked to write, we must write. If they are asked to express creativity we must do the same. It also challenges urban educators who are used to talking politics and social justice in their classroom to see the potential of ecology as field where some of the most pressing

justice work needs to be done. The true potential of organic cultures, in the classroom and beyond, can only be kept vibrant if mutual participation is fostered.

Hip hop ecology represents the process where we find value in creative forms of musical discourse, particularly when teaching about socioecological issues in marginalized settings like urban schools. It also represents how we decolonize the way we talk about nature, remixing it with forms of music we may initially think have nothing to do with ecology. I now present this work all around Boston and although I call this style hip hop I am actually speaking to the power of the oral tradition, in whatever form it may come. I often get pushback because I am Latino, where other teachers believe I can only do this because I am not White. I am no rapper by any means, and I grew up in a wealthy suburb, but in challenging myself to listen to and respond to a culture that is not my own I came to embody hip hop.

When I do get confronted about not being White and the supposed ease with which I work with hip hop, I remind the commenters that this journey did not begin with hip hop at all, but rather with my love of Marvin Gaye, the "parents music." Soul music and Marvin Gaye became my conduit to hip hop culture and in turn my own organic and creative soul. As much as this is about the Black oral tradition and its themes of sustainability I return to the idea that I was just sharing something I loved with my students. It was this love that they saw, a love engrained even deeper as they saw me

try to contribute my own real voice to reclaim the landscape of the classroom. Just like many of them half-smirked at Marvin Gaye and many likely had critiques of my flow as a fumbled Austin's words, the straight up use of the creative voice as a "tool" was not what moved them. I modeled what it was like for an ecologist to try on some hip hop flavor in my orality and invited them to do the same journey in reverse.

Hip hop ecology can also inform studies of gentrification of speech and space. Gentrification is a theme whose negative ramifications come less from the number of White, affluent people moving in to a neighborhood and more about how little of their lives they share and the minimal interaction with their immediate community. Looked at as a number, I was just one more affluent teacher trying to help "poor, inner-city, kids of color." What helped me the most was how much I chose to show them that I was not just a scientist, but a person who has roots, roots that keep me strong even with all my degrees and fancy ways of talking about nature. In this manner I have shown that de-gentrifying does not mean removing myself from the equation but actually going deeper. In the end, the youth began to see that one can be a scientist and still retain a soul. They saw that bringing poetry into a science class is not such a trespass after all and that each is just one form of a culture's rhythmic language trying to save nature and ourselves. Science, hip hop, soul and art are indeed one in the same but it takes a talent to work them side-by-side on the same turntables.

When viewed not as the use of a discrete genre of music with a discrete discipline of environment but as sharing that organic part of oneself in a creative and oral capacity, the pedagogical implications transcend the race of the educator and the race of the student body. What remains is only the organic voice and how well-practiced, cultivated and powerful it is. Like Dixon remarked, this is how we combat the alienation that is evident in our way of teaching about nature, this is the power of the oral tradition and its root in nature. When we take these creative voices more seriously in academic settings we can simultaneously restore a level of diversity in our environmental curriculum, in our own forms of pedagogy and ultimately in our movement for global sustainability.

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Conclusion

It's Bigger than Hip Hop

In the track "It's Bigger Than Hip Hop"(2000) by the revolutionary rap duo Dead Prez they emphasize how much deeper hip hop is as a continuation of the oral tradition and warn artists away from commercialized rap.

Hip hop means sayin' what I want and never bite my tongue

Hip hop means teaching the young

If you feelin' what I'm feelin' then you hearin' what I'm sayin'

cause these fake, fake records just keep on playin"

As I have mentioned, I believe the greenness of hip hop is not opportunistic but mixed in with the very ethos of the Black oral tradition. The track "It's Bigger than Hip Hop" is a cultural symbol that recognizes that the genre is ultimately about teaching, freedom and empowerment and those are the most valuable lessons I have taken away from creating this work. At the National Hip Hop Political Convention that took place in Chicago's South Side in 2006 the opening speaker had us all chant this phrase out loud, to remind

us of how hip hop is more than music and this has stayed with me. Hip hop is inextricable from race and the politics of oppression like jazz before it and this dissertation can begin a much broader dialogue on the roles of creative rhythms, education, race and nature.

Although these three studies are intended for separate papers to different audiences I believe they flow together and build from one another. These studies are fundamentally about rhythm, both social and natural and each project can be viewed from this perspective. The first study comparing scientific texts on environment with green hip hop allows us to juxtapose two linguistic rhythms. General opinion may be that scientific texts do not have rhythm, particularly in comparison to vibrant hip hop beats, but a sociolinguistic perspective reminds us that all discourse has rhythms, they are expressed differently in codes, registers and vernaculars but they are present. This more musical perspective on comparing texts and cultures is favored by educational scholars who are presented with the task of reconciling differences in linguistic and cultural rhythms in their classrooms.

As I wrote in the introduction, these studies follow a flow from seeing hip hop as an external text to be analyzed to eventually incorporating it as part of my own pedagogical discourse. This work literally changed my own voice and helped me see the organic forms of discourse that I had unintentionally devalued in my academic training. Hip hop ecology is more than just bringing in music to environmental education, it is a style that

can be used to challenge others to find the organic source of their creativity and blend it with their rational perspective on confronting large problems such as the ecological crisis. The studies' migration from the external to the internal and its profound effect on me, have helped me rethink the training trajectory for aspiring environmental scholars in our educational system. I offer the following recommendations for practitioners that embody a "hip hop ecology" in its fullest form.

1) **Oral presentation matters:** The actions of the hip hop ecologists have shown me that the power of the cultural voice lies not in its content, but more in its style and fluidity of delivery. As a self-annointed Powerpoint aficionado I recognized that I was relying too much on technologized forms of presentation. A truly organic experience lies in using only your voice and mixing this with the emotions of experience and identity. Too often our environmental scholars have little experience or training giving their arguments to anyone who will actively disagree with them; our academic culture is too polite. The hip hop emcees forge their skills in interactive and stingy crowds who only show love when the emcee reaches a good flow. Likewise, I only was inspired to pursue this dissertation when my first high school classes knocked my teaching ego flat with their distaste for how I was talking about ecological problems. This is not a natural talent but comes from practice and writing and revising. Our academic discourse on environment has become so sterile by comparison and we have lost

a real arena where we can train our oral presentation skills. This is particularly ironic when the content is about organic food or its risk of over-industrialization when our very mode of sharing knowledge is equally co-opted. Thinking harder about how to take even a part of the hip hop practice of freestyling, sampling and flow into our own presentations can help produce a stronger edge and engaging organic flow to our words. In a time when we are inundated with green messages this may be more important than ever. Stronger environmental programs, like hip hop cyphers, will spend more time in practicing the powerful and rooted delivery of critical and political eco-messages.

2) **Find your own hip hop ecology for true interdisciplinary thinking:** As my third study discussed, there is something crucial about understanding the metaphoric and literal significance of the dual-turn tabling skills of hip hop deejays. The idea of hip hop ecology is a skill that challenges us to better blend our creative side with our rational side, just as the two records are blended on a turntable. I am wary that many literal thinkers will see this work as a simple pairing of hip hop music with environmental teaching and see this as relevant only for "youth of color" or environmental teachers. I am also wary that some will read this as a glorification of hip hop as a solve-all for social problems. Academics are trending to combining disciplines, such as "ecological economics," and seeing this as their work is done. The simple combination of names seems to me to be two records put much closer to each other, but when the new hybrid is wielded just as

unskillfully as the former discipline the same problems of insularity, inbreeding, and ego repeat themselves. When the emphasis is put on interdisciplinarity not as a one-step but as a continual and flowing skill, we can learn from hip hop culture and extend this to an infinite set of combinations. In hip hop ecology this means replace the words "hip hop" with your favorite form of creativity, then replace the word "ecology" with the social issue you feel most passionate about. Then you may have a truly organic combination that you can try to develop in your community through teaching and training. When we allow our energies to be channeled too much into creative but frivolous worlds, or too much into our rational and professional worlds we become predictable and easy for the hegemonic forces to consume. My pairing of hip hop and ecology is just the beginning, and I look forward to the next combination of my creative side with my environmental scholarship. For environmental programs, more assignments where we intentionally blend eco-discourse with a creative discipline and share that with other groups would be a key training step.

3) **Create more sharing and recording and collective memorials of nature:** As I said in the second study on the hip hop ecologists, these youth are the conveyor belts of history from past to present, drawing from the source of their culture. What gives them a stronger step is their deliberate attempts at putting their message in reified forms to the public. The issues of race and nature have been around for some time but the youth of this study have taught me how vital it is to create

real messages that can be heard by a broad audience. In academic discourse we have journals, but so few outside the academy read or comprehend these. Like Antonio Gramsci, he published his small but powerful newspaper on his political beliefs in the face of violence and arrest, and he did so in an accessible manner. He ALSO wrote more complex and theoretical pieces, but the idea that one can and should do both is important. In the modern era, we have social media and digital recording devices that can aid in the memorialization of organic thoughts and refining our skills at this is critical and also differentiates us from Gramsci's time. To be a scholar with good thoughts at the mercy of the information technology guru for sharing the message is a handicap. An example of how to counter this is my Environmental Justice Action Media (EJAM) site where I took the time to record many of the students and make their work available to students and teachers around the country. All of these skills are self-taught and social media sites are making broadcasting messages even easier. The experience of listening to it online is less powerful than in person but it can be a start. I actively promote the site with training for other teachers, making sure my media is used well by others. These steps could be used in an environmental education experience by having students conduct a field intervention and then requiring they record this and package it into compelling digital stories that can be used by other practitioners. This could help build a stronger base of examples of cultural texts that speak about environment from multiple perspectives.

The preceding recommendations are just a beginning, but they share a strong revisionist approach to existing forms of environmental education. I could not have imagined this perspective when I first arrived at Boston College, it was only through direct interaction with the inspiring youth of this study that I got this real perspective. At the same time, I needed to develop my academic skills just as much and I am forever indebted to those that helped me develop my mixing skills with those rhythms. I plan to continue this type of reforming environmental education at all levels and I recognize that if I am still studying hip hop in twenty years I will have failed my own test of finding a hip hop ecology.

Lastly, I end with a reflection on my positionality in this story. I pay close attention to how my own social location and educational background influences my perspective in this dissertation. I arrived at this research question because I myself am trained in "hard" natural field science, and when I brought this perspective into my first urban classrooms it was clearly not synchronized with the culture of my students. My training in Westernized perspectives on nature has caused me to relate strongly to the current academic studies that are calling for a rethinking of environmental science education in culturally diverse settings. Like Robin Kimmerer (2002) who points out that science education alienates many who yearn for a more spiritual, political and holistic approach to human-nature relations I not only saw this in my students but identified it in myself. Hip Hop ecology is about mixing up environmental thought with other creative forms ,

just like hip hop mixes and samples music in creative and novel ways (Baker, 1991; Rice, 2003). To embody the hip hop ethos I wanted to mix together two rhythms most would say are incompatible or not even worth comparing; science and rap. This project that led into the third ethnographic study is really my way of forcing myself to take the rhythm that I knew (science) and bridge to a rhythm that I was less familiar with at the time (hip hop).

Like the hip hop ecologists, I also had to navigate my own complex issues of race and culture. I was born in Colombia, but was adopted when I was two weeks old by my White, Jewish family. So, I am completely culturally white and Jewish American but also am dark-skinned. Both my parents are PhDs so academics are also a part of my family culture (for better and worse). I experience my environmentalism as an Anglo-American similar to Lynch's (1993) analysis but there has also always been a part of me that connects to and relates with the experience of being a person of color in the US. Perhaps this also fuels my continuous efforts to integrate racial thought with mainstream, scientific, academic and environmental thought as this is a metaphor for my life story. I often talk about this remixing of hip hop and environment in public lectures and many white educators ask if I think I can only do this work because I do not look White. I prefer to see hip hop as a skill to be learned, one that can be done by anyone who focuses more on understanding it as a rhythm rather than as a racially essentialized form of discourse. When these educators learn that I am culturally white but still effective as an educator this adds a different perspective.

To bring the many thoughts about music, culture, race, nature and empowerment together, I conclude with a final reference to Bill Strickland, author of “Making the Impossible, Possible.” Strickland grew up in poverty in his African American community in Pittsburgh. He is now known for setting up some of the most successful youth training centers ever made for inner-city youth of color. He built his centers on the simple principles of creativity and dignity and has some of the strongest results of any youth empowerment projects I have ever seen. Strickland is dedicated to education and real results and, like me, he had a love for music but did not make any of his own. When his youth centers became really popular he incorporated jazz performances where they had live recordings and managed to attract some of the most famous musicians in the world. A meeting with Dizzy Gillespie helped solidify for Strickland a connection between music, rhythm and empowering people through education:

> **One of the first jazz masters to appear on the stage of our music hall was the legendary trumpet player Dizzy Gillespie. When he walked through the doors and looked around, his face lit up with that famous bug-eyed smile. "What is this place?" he asked me.**
>
> **"This is my idea of a school," I told him. Then I took him on a tour. I showed him the ceramics studio, where kids from the street were bent over potter's wheels, lost in the creative struggle to shape lumps of clay into something beautiful. In our chemistry tech classrooms he saw formerly homeless people unraveling the mystery of complex logarithmic equations, and in the kitchen he watched single mothers and laid-off factory workers put the finishing touches on delicate pastries and pull golden-brown souffles from the big commercial ovens. I introduced him to students and teachers alike. "This is Dizzy Gillespie," I said, "one of the greatest jazz musicians ever."**

> **After one of those introductions, Dizzy smiled at me and said "You know, you're a hell of a jazz musician yourself."**
>
> **Dizzy's comment threw me. "Musician?" I chuckled. "I don't even play an instrument."**
>
> **Dizzy raised his eyebrows, as if to say, "Don't you think I know a jazz tune when I see one?" Then he thumped my chest with his finger and said, "This place is your instrument, man, and everything that happens here is your song."**
>
> **...**
>
> **I realized what Dizzy was really trying to say: that nobody could have planned a place like this. It had to rise up, had to be conjured up, as a natural, almost inevitable expression of someone's desperate search for meaning and purpose.** (Strickland, 2007, p. 103)

So, when I say I too do hip hop ecology I mean it in the way Bill Strickland did Jazz. I am not a great rapper by any stretch but I carry the essence of the hip hop spirit in the programs I create and the time I have invested in starting programs throughout the city. By aligning my research with my own search for purpose, natural and organic connections just happened in ways that have forever changed my perspective on what counts as nature and who is included as an environmental scholar. Hip hop ecology is a way of harnessing the power of creative cultural movements and using them to re-inspire and reconnect with the power of the Earth and this is indeed much bigger than hip hop itself. When the rhythmic power of the people is synchronized with the sustainable rhythms of our Earth the momentum to confront this age's most pressing ecological and social crises is unstoppable.

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